

**EXECUTIVE PROGRAMME  
STUDY MATERIAL**

**COMPANY  
ACCOUNTS, COST  
AND MANAGEMENT  
ACCOUNTING**

**MODULE I - PAPER 2**

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**THE INSTITUTE OF  
Company Secretaries of India**

**IN PURSUIT OF PROFESSIONAL EXCELLENCE**  
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EXECUTIVE PROGRAMME  
**COMPANY ACCOUNTS, COST AND  
MANAGEMENT ACCOUNTING**

Finance and accounting have assumed much importance in today's competitive world of business wherein corporate organisations have to show the true and fair view of their financial position. Thus, the application of accounting in the business sector has become an indispensable factor. Of course, the company secretary has to provide the complete and accurate information about the financial operations of the company to his superiors to take decisions. This emphasises that the books of account are to be maintained accurately, up-to-date and as per the norms.

Considering the significance of the matter the subject Company Accounts has been prescribed in our syllabus with the objective to provide conceptual understanding of the principles involved in the maintenance of company accounts in accordance with the provisions of company law. While designing the contents of the syllabus, it has been presumed that the students possess the knowledge of the basic principles of Accountancy, prescribed for the Foundation Programme. Besides, the students have requisite knowledge of legal provisions of the Companies Act, 1956 and the procedures prescribed there under.

The subject 'Cost and Management Accounting' is very important and useful for optimum utilisation of existing resources. It is an indispensable discipline for corporate management, as the information collected and presented to management based on cost and management accounting techniques helps management to solve not only specific problems but also guides them in decision making. Keeping in view the importance of this subject, various topics on Cost and Management Accounting have been prescribed in the syllabus of our course with the objective of acquainting the students with the basic concepts used in cost accounting and management accounting having a bearing on managerial decision-making.

The entire paper has been discussed in sixteen study lessons, divided into two parts viz. Part-A and Part-B. Part-A deals with Company Accounts while Part-B deals with Cost and Management Accounting. This study material has been updated upto June, 2011. The topics on Company Accounts have been discussed in seven study lessons comprising the various accounting aspects of joint stock companies. While in Cost and Management Accounting every efforts has been made to give a comprehensive coverage of all the topics relevant to the subject. In all study lessons the requisite theoretical framework for understanding the practical problems in the subject has been explained and wherever necessary practical illustrations have been given to facilitate better understanding. At the end of each study lesson a good blend of theoretical and practical questions have been given under the caption 'Self Test Questions' for the practice of students to test their knowledge. In fact, this being a practical

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paper, students need to have good theoretical knowledge and practice to attain the requisite proficiency and confidence. Therefore, in order to supplement the information/contents given in the study material, students are advised to refer to the Suggested Readings mentioned in the study material, Student Company Secretary, Business Dailies and Journals.

In the event of any doubt, students may write to the Directorate of Academics and Professional Development in the Institute for clarification.

Although care has been taken in publishing this study material, yet the possibility of errors, omissions and/or discrepancies cannot be ruled out. This publication is released with an understanding that the Institute shall not be responsible for any errors, omissions and/or discrepancies or any action taken in that behalf.

Should there be any discrepancy, error or omission noted in the study material, the Institute shall be obliged if the same are brought to its notice for issue of corrigendum in the Student Company Secretary.

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EXECUTIVE PROGRAMME  
SYLLABUS  
FOR  
**PAPER 2: COMPANY ACCOUNTS, COST AND  
MANAGEMENT ACCOUNTING**

**Level of knowledge:** Working knowledge.

**Objectives:**

(i) To provide working knowledge of accounting principles and procedures for companies in accordance with the statutory requirements.

(ii) To acquaint the students with cost and management accounting techniques and practices.

**Detailed contents:**

**PART A: COMPANY ACCOUNTS (50 MARKS)**

1. Accounting standards - relevance and significance; national and international accounting standards.
2. Accounting for share capital transactions - issue of shares at par, at premium and at discount; forfeiture and re-issue of shares; buy-back of shares; redemption of preference shares; rights issue.
3. Issue of debentures - accounting treatment and procedures; redemption of debentures; conversion of debentures into shares.
4. Underwriting of issues; acquisition of business; profits prior to incorporation; treatment of preliminary expenses.
5. Preparation and presentation of final accounts of joint stock companies as per company law requirements; bonus shares.
6. Holding and subsidiary companies - accounting treatment and disclosures; consolidation of accounts.
7. Valuation of shares and intangible assets.

**PART B: COST AND MANAGEMENT ACCOUNTING (50 MARKS)**

8. Cost accounting – objectives of costing system; cost concepts and cost classification; management accounting – nature and scope; role of management accountant, tools and techniques of management accounting; distinction between financial accounting, cost accounting and management accounting.
9. Elements of cost:
  - (i) Material cost – purchase procedures, store keeping and inventory control, fixing of minimum, maximum and re-order levels, ABC analysis, pricing of receipts and issue of material and accounting thereof; accounting and

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control of wastage, spoilage and defectives.

- (ii) Labour cost – classification of labour costs, payroll procedures, monetary and non-monetary incentive schemes; labour turnover and remedial measures; treatment of idle time and overtime.
  - (iii) Direct expenses – nature, collection and classification of direct expenses and its treatment.
  - (iv) Overheads – nature, classification, collection, allocation, apportionment, absorption and control of overheads.
10. Methods of costing - unit costing, contract costing.
  11. Budgetary control – preparation of various types of budgets, advantages and limitations; budgetary control reports to management.
  12. Marginal costing - application of marginal costing; cost-volume-profit relationship; break-even analysis, preparation of break-even charts; profit – volume graph; practical application of profit volume ratio.
  13. Analysis and interpretation of financial statements - nature, objectives; latest trends in presenting financial data; importance and limitations; accounting ratios - classification, advantages and limitations.
  14. Cash flow statements – classification of cash flows, preparation and usefulness.

**LIST OF RECOMMENDED BOOKS**  
**COMPANY ACCOUNTS,**  
**COST AND MANAGEMENT ACCOUNTING**

**Readings:**

1. M.C. Shukla, T.S. Grewal & S.C. Gupta : Advanced Accounts Vol. II; S. Chand & Company Ltd., 7361, Ram Nagar, New Delhi-110 055.
2. R.L. Gupta & M. Radhaswamy : Company Accounts; Sultan Chand & Sons, 23, Daryaganj, New Delhi-110 002.
3. S.P. Jain & K.L. Narang : Advanced Accountancy-Vol.II; Kalyani Publishers, 23, Daryaganj, New Delhi - 110 002.
4. S.N. Maheshwari & S.K. Maheshwari : Advance Accounting Vol. II; Vikas Publishing House (Pvt.) Ltd., A-22, Sector 4, Noida – 201 301.
5. Ashok Sehgal & Deepak Sehgal : Advanced Accounting Vol. 2; Taxmann's, 59/32, New Rohtak Road, New Delhi-110 005.
6. J.R. Monga : Fundamentals of Corporate Accounting; Mayoor Paperbacks, A-95, Sector 5, Noida-201 301.
7. S.P. Jain & K.L. Narang : Cost and Management Accounting; Kalyani Publishers, 23, Daryaganj, New Delhi-110 002.
8. M.N. Arora : Cost and Management Accounting (Theory and Problems); Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg, Kelewadi, Girgaon, Mumbai – 400 004.
9. R.S.N. Pillai & Bhagvathi : Management Accounting; S. Chand & Co. Ltd., 7361, Ram Nagar, Qutab Road, New Delhi-110 055.
10. V.K. Saxena & C.D. Vashist : Cost Accounting; Sultan Chand & Sons, 23, Daryaganj, New Delhi -110 002.
11. M.N. Arora : A Text Book of Cost and Management Accounting; Vikas Publishing House (P) Ltd., A-22, Sector 4, Noida – 201 301.
12. S.N. Maheshwari : Cost and Management Accounting; Sultan Chand & Sons, 23, Daryaganj, New Delhi -110 002.
13. S N Maheswari & S N Mittal : Cost Accounting -Theory and Problems; Shree Mahavir Book Depot; 2603, Nai Sarak,

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Delhi 110 006

14. I.M. Pandey : Management Accounting; Vikas Publishing House (P) Ltd., A-22, Sector 4, Noida – 201 301
15. C.T. Horngren : Cost and Management Accounting - A Managerial Emphasis; Pearson Education Asia, 482, F.I.E. Patparganj, Delhi-110 092.

**References:**

1. Guide To Indian Accounting Standards Converged with IFRSs : T.P. Ghosh, CA. Srinivasan Anand G. Taxmann Publication (P) Ltd., 59/32, New Rohtak Road, New Delhi – 110 005.
2. A practical Guide to international Financial Reporting Standards (IFRSs) : Dr. Sanjeev Singhal, Taxmann Publication (P) Ltd., 59/32, New Rohtak Road, New Delhi – 110 005.
3. Dolphy D'Souza : Indian Accounting Standards & GAAPP; Snow White Publications Pvt. Ltd., Her Mahal, 532, Kalbadevi Road, Mumbai – 400 002.
4. Compendium of Accounting Standards : The Institute of Chartered Accountants of India, New Delhi .
5. S.P. Iyengar : Cost and Management Accounting; Sultan Chand & Sons, 23, Daryaganj, New Delhi – 110 002.
6. Ravi M. Kishore : Advanced Management Accounting; Taxmann Publication (P) Ltd., 59/32, New Rohtak Road, New Delhi – 110 005.
7. M.Y. Khan & P.K. Jain : Theory and Problems of Management and Cost Accounting; McGraw-Hill Education (India) Ltd. B-4, Sector 63, Gautam Budh Nagar, Noida – 201 301.
8. Drury Colin : Management and Cost Accounting; International Thomson Business Press, London.
9. Dominiak & Louderback : Managerial Accounting; South Western College, Publishing Company, Ohio, USA.

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EXECUTIVE PROGRAMME  
**COMPANY ACCOUNTS,  
COST AND MANAGEMENT ACCOUNTING**

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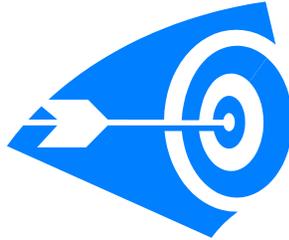
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## STUDY I

# ACCOUNTING STANDARDS

### LEARNING OBJECTIVES



After studying this Study Lesson you will be able to:

- Understand the meaning and significance of accounting standards.
- Appreciate the need for accounting standards.
- Explain the scope of accounting standards.
- Understand the procedure of issuing accounting standards.
- Familiarize with the Accounting Standards (AS) issued by ICAI.
- Understand the various International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) issued by IASB.

### 1. INTRODUCTION

Accounting has become a pre-requisite for the preparation of financial statements. Financial statements are the basic and format means through which the corporate management communicates financial information to the various external users such as present and potential shareholders, lenders, employees, suppliers and other creditors, customers, government and its agencies, the public etc. A set of financial statements normally includes balance sheet, profit and loss account, cash flow statement and explanatory notes and schedules thereof. The objective of financial statements is to provide information about the financial position, performance and financial adaptability of an enterprise that is beneficial to a wide range of users.

Preparation and presentation of corporate financial statements are governed by the Companies Act, 1956 and accounting standards. World over professional bodies of accountants have the authority and obligation to prescribe the accounting standards. The International Accounting Standards/International Financial Reporting Standards are pronounced by the International Accounting Standards Board (IASB) comprised of representatives of member institutes of professional accountants. In India the Institute of Chartered Accountants of India had established in 1977 an Accounting Standards Board (ASB) comprising of members of the Institute, representative from Chambers of Commerce and Industry, nominees from Central Government, Regulatory Bodies, sister institutes and other statutory bodies, with the ultimate responsibility upon the Institute to formulate accounting standards on significant accounting matters keeping in

view the international standards on the subject and legal requirements. The Central Government, constituted an Advisory Committee known as 'National Advisory Committee on Accounting Standards' (NACAS) to advise the Central Government on the formulation and laying down of accounting policies and accounting standards for adoption by companies or class of companies.

According to Section 211(3C) of the Companies Act, 1956, 'accounting standards' refer to the standards of accounting recommended by the Institute of Chartered Accountants of India constituted under the Chartered Accountants Act, 1949, as may be prescribed by the Central Government in consultation with the National Advisory Committee on Accounting Standards established under Sub-section (1) of Section 210A.

## **2. MEANING OF ACCOUNTING STANDARDS**

Accounting as a "language of business" communicates the financial results of an enterprise to various interested parties by means of financial statements, which have to exhibit a "true and fair" view of its state of affairs. Like any other language, accounting, has its own complicated set of rules. However, these rules have to be used with a reasonable degree of flexibility in response to specific circumstances of an enterprise and also in line with the changes in the economic environment, social needs, legal requirements and technological developments. Therefore, these rules cannot be absolutely rigid unlike those of the physical sciences. This, however, does not imply that accounting rules can be applied arbitrarily, for they have to operate within the bounds of rationality.

Accounting standards, which seek to suggest rules and criteria of accounting measurements, have to keep the above in view. On the one hand the rules and criteria cannot be rigid and on the other they cannot permit irrational and totally expedient accounting measurements. Formulation of proper accounting standards, therefore, is a vital step in developing accounting as a business language.

Accounting standards relate to the codification of generally accepted accounting principles. These are stated to be the norms of accounting policies and practices by way of codes or guidelines to direct as to how the items, which go to make up the financial statements, should be dealt with in accounts and presented in the annual reports. These are set in the form of general principles and left to the professional judgement for application. In this respect the main purpose of standards is to provide information to the users as to the basis on which the accounts have been prepared. By the disclosure of accounting policies the users are in a position to interpret the reported information. Again standards may consist of detailed rules to be adopted for accounting treatment of various items before the presentation of financial statements.

An accounting standard may be regarded as a sort of law - a guide to action, a settled ground or basis of conduct or practice. Accounting Standards are formulated with a view to harmonise different accounting policies and practices in use in a country. The objective of Accounting Standards is, therefore, to reduce the accounting alternatives in the preparation of financial statements within the bounds of rationality, thereby ensuring comparability of financial statements of different enterprises with a view to provide meaningful information to various users of financial statements to enable them to make informed economic decisions.

The objective of setting standards is to bring about a uniformity in financial reporting and to ensure consistency and comparability in the data published by enterprises. For accounting standards to be useful as a tool to enhance corporate governance and responsibility, two criteria must be satisfied, viz.,

- (i) A standard must provide a generally understood and accepted measure of the phenomena of concern.
- (ii) A standard should significantly reduce the amount of manipulation of the reported numbers and is likely to occur in the absence of the standard.

### **3. SIGNIFICANCE OF ACCOUNTING STANDARDS**

Accounting standards can play an important role. Accounting standards facilitate uniform preparation and reporting of general purpose financial statements published annually for the benefit of shareholders, creditors, employees and the public at large. The standard issued should be consistent with the provisions of law. Thus, they are very useful to the investors and other external groups in assessing the progress and prospects of alternative investments in different companies in different countries. Standards will help public accountants to deal with their clients by providing rules of authority to which the accountants can appeal, in their task of preparing financial statements on a true and fair basis. It is so because accounting reports prepared in accordance with standards are reliable, uniform and consistent. Accounting standards will raise the standards of audit itself in its task of reporting on the financial statements. Government officials and others will find accounting reports produced in accordance with established standards to be more easily aggregated and used, particularly if they are concerned with the meaningfulness of the numbers for the purposes of economic planning, market analysis and the like. All of these factors have been important determinants of the establishment of accounting standards.

### **4. NEED FOR ACCOUNTING STANDARDS**

Different groups of people, wholly divorced from the management of an enterprise, are interested in reading and using the published financial statements of the enterprise because these groups of people have a legitimate interest in its affairs. In many cases they have a legal right to the information supplied to them. People with an interest in the affairs of enterprises include shareholders and potential shareholders; suppliers and potential suppliers of debt capital; trade creditors including suppliers of goods and services, customers, employees, officials of the income tax department and numerous other government interests.

All these people have an interest, in ensuring that the financial statements they use, and upon which they rely, present a true and fair picture of the position and progress of the enterprise. The basis of presentation should be consistent with that used in the past by the enterprise and be comparable with what is being done by other similar enterprises. In some cases the "outsider" will be supplied with special purpose financial statements over and above the generally available published annual report.

The stability of our economic system depends upon the confidence that user groups have in the fairness and reliability of the financial statements on which they rely. It is the function of accounting standards to create this general sense of confidence by providing a structural framework within which credible financial

statements can be produced. Accounting standards deal mainly with the system of financial measurement and disclosure used in producing a set of fairly presented financial statements. They can thus be thought of as a system of measurement and disclosure rules.

Indeed, accounting standards are more than just a skeleton or a framework defining what should be done in preparing financial statements. They also draw the boundaries within which acceptable conduct lies and in that, and many other respects, they are similar in nature to laws.

Management is free to develop its own internal standards of financial reporting, for use in the preparation of the financial statements and that it uses in planning, directing, and controlling the operations of the enterprise. However, the financial statements produced by management for the use of external users are employed by such users in making assessments that are of direct concern to management. Thus, among other things, published financial statements help in measuring the effectiveness of management's stewardship. They help in assessing its skill in maintaining and improving the profitability of the company, they depict the progress of the company, its solvency and liquidity, and generally they are an important factor in assessing the effectiveness of management's performance of its duties and of its leadership. Thus, published financial statements are likely to have an important influence on management's rewards and on the value of its shareholdings in the enterprise.

Accounting standards are also vitally important in resolving potential conflicts of financial interest among the various external groups that use and rely upon published financial statements. Such conflicts of interest are frequent and real. Thus, for example, potential shareholders and existing actual shareholders may have opposite interest in assessing the profitability and the value of a company. Potential shareholders are likely to be dismayed if they buy shares on the strength of published financial reports which later turn out to have been optimistic. Present shareholders who sell under such circumstances are likely to be more satisfied with the outcome, and certainly more satisfied than if they retain holdings on the strength of unduly optimistic financial reports.

There may also be potential conflicts of interest between shareholder and creditors in the case of a company that is running into financial difficulties; and shareholders, employees, customers and suppliers, frequently have conflicting interests in the outcome of the measures of a company's economic performance.

Thus, accounting standards can be seen as providing an important mechanism to help in the resolution of potential financial conflicts of interest between the various important groups in society. It follows that it is essential that accounting standards should command the greatest possible credibility among all of these different groups.

## **5. SCOPE OF ACCOUNTING STANDARDS**

Every effort has been made to issue accounting standards which are in conformity with the provisions of the applicable laws, customs, usages and business environment of our nation. However, if due to subsequent amendments in the law, a particular accounting standard is found to be not in conformity with such law, the provision of the said law will prevail and the financial statements should be prepared in conformity with such law.

The accounting standards by their very nature cannot and do not override the local regulations which govern the preparation and presentation of financial statements in our country. However, the Institute (ICAI) will determine the disclosure requirements to be made in the financial statements and auditor's reports. Such disclosure may be by way of appropriate notes explaining the treatment of particular items. Such explanatory notes will only be in the nature of clarification and therefore, need not be treated as adverse comments on the related financial statements.

The accounting standards are intended to apply to items which are material. Any limitations with regard to the applicability of a specific standard will be made clear by the Institute from time to time. The date from which a particular standard will come into effect, as well as the class of enterprises to which it will apply, will also be specified by the Institute. However, no standard will have retroactive application, unless otherwise stated. The Institute will use its best endeavours to persuade the Government, appropriate authorities, industrial and business community to adopt these standards in order to achieve uniformity in the presentation of financial statements.

In formulation of Accounting Standards, the emphasis would be on laying down accounting principles and not detailed rules for application and implementation thereof.

The Accounting Standards Board may consider any issue requiring interpretation on any Accounting Standard. Interpretations will be issued under the authority of the Council. The authority of Interpretation is the same as that of Accounting Standard to which it relates.

## **6. COMPLIANCE OF ACCOUNTING STANDARDS**

The preparation of financial statements with adequate disclosures, as required by the accounting standards, is the responsibility of the management of the organisation. Statutes governing certain enterprises require that the financial statements should be prepared in compliance with the Accounting Standards, e.g., the Companies Act, 1956 (Section 211). Financial Statements cannot be described as complying with the Accounting Standards unless they comply with all the requirements of each applicable Standard. It is the responsibility of the auditor to form his opinion and to report on such financial statements. The auditor while discharging his attest functions has to ensure that the accounting standards have been implemented in the presentation of financial statements covered by the auditors' report. It is his responsibility to disclose any deviations from such standards so that the users of the statements may be aware of such deviations. The Accounting Standards will be mandatory from the respective date(s) mentioned in the Accounting Standard(s).

As per Section 211(3A) of the Companies Act, 1956 every profit and loss account and balance sheet of the company shall comply with the accounting standards. Section 211(3B) specifies that where the profit and loss account and balance sheet of the company do not comply with the accounting standards, such company shall disclose in its profit and loss account and balance sheet the following information:

- (a) the deviations from accounting standards;
- (b) the reasons for such deviations; and
- (c) the financial effects if any, arising due to such deviation.

It is expected that the compliance of the accounting standards by all concerned will improve the quality of presentation of financial statements and will also ensure an increasing degree of uniformity. It will also lead to provision of necessary information for proper understanding of the financial statements of the business organisations.

## **7. ACCOUNTING STANDARDS BOARD**

Recognizing the need to harmonize the diverse accounting policies and practices at present in use in India and keeping in view the International developments in the field of accounting, the Council of the Institute of Chartered Accountants of India constituted the Accounting Standards Board (ASB) in April, 1977.

The following are the objectives of the Accounting Standards Board:

- (i) To conceive of and suggest areas in which Accounting Standards need to be developed.
- (ii) To formulate Accounting Standards with a view to assisting the Council of the ICAI in evolving and establishing Accounting Standards in India.
- (iii) To examine how far the relevant International Accounting Standard/ International Financial Reporting Standard can be adapted while formulating the Accounting Standard and to adapt the same.
- (iv) To review, at regular intervals, the Accounting Standards from the point of view of acceptance or changed conditions, and, if necessary, revise the same.
- (v) To provide, from time to time, interpretations and guidance on Accounting Standards.
- (vi) To carry out such other functions relating to Accounting Standards.

The main function of the ASB is to formulate Accounting Standards so that such standards may be established in India. While formulating the Accounting Standards, the ASB will take into consideration the applicable laws, customs, usages and business environment prevailing in India.

The Accounting Standards are formulated under the authority of the Council of the ICAI. The ASB has also been entrusted with the responsibility of propagating the Accounting Standards and of persuading the concerned parties to adopt them in the preparation and presentation of financial statements. The ASB will provide interpretations and guidance on issues arising from Accounting Standards. The ASB will also review the Accounting Standards at periodical intervals and, if necessary, revise the same.

The composition of the ASB is broad-based with a view to ensuring participation of all interest-groups in the standard-setting process. These interest-groups include industry, representatives of various departments of government and regulatory authorities, financial institutions and academic and professional bodies.

## **8. ACCOUNTING STANDARDS**

In India the Central Government in consultation with the National Committee on Accounting Standards (NACAS) has issued the Companies (Accounting Standards)

Rules 2006. Under this Rules, Accounting Standards (i.e. 1 to 7 and 9 to 29) have been notified: In addition, the Ministry of Corporate Affairs has notified convergence of 35 Indian Accounting Standards with International Financial Reporting Standards (henceforth called IND AS) on February 25, 2011. These are - IND ASs 1, 2, 7, 8, 10, 11, 12, 16, 17, 18, 19, 20, 21, 23, 24, 27, 28, 29, 31, 32, 33, 34, 36, 37, 38, 39, 40, 101, 102, 103, 104, 105, 106, 107 and 108. These Accounting Standards are yet to be enforced.

The following are the Accounting Standards issued under Companies (Accounting Standards) Rules 2006:

Accounting Standard (AS-1)	Disclosure of Accounting Policies
Accounting Standard (AS-2)	Valuation of Inventories
Accounting Standard (AS-3)	Cash Flow Statement
Accounting Standard (AS-4)	Contingencies and Events Occurring after the Balance Sheet Date
Accounting Standard (AS-5)	Net Profit or Loss for the Period, Prior Period Items and Changes in Accounting Policies
Accounting Standard (AS-6)	Depreciation Accounting
Accounting Standard (AS-7)	Construction Contracts
Accounting Standard (AS-9)	Revenue Recognition
Accounting Standard (AS-10)	Accounting for Fixed Assets
Accounting Standard (AS-11)	The Effects of Changes in Foreign Exchange Rates
Accounting Standard (AS-12)	Accounting for Government Grants
Accounting Standard (AS-12)	Accounting for Investments
Accounting Standard (AS-14)	Accounting for Amalgamations
Accounting Standard (AS-15)	Employee Benefits
Accounting Standard (AS-16)	Borrowing Costs
Accounting Standard (AS-17)	Segment Reporting
Accounting Standard (AS-18)	Related Party Disclosures
Accounting Standard (AS-19)	Leases
Accounting Standard (AS-20)	Earnings Per Share
Accounting Standard (AS-21)	Consolidated Financial Statements
Accounting Standard (AS-22)	Accounting for Taxes on Income.
Accounting Standard (AS-23)	Accounting for Investments in Associates.
Accounting Standard (AS-24)	Discontinuing Operations.

Accounting Standard (AS-25)	Interim Financial Reporting.
Accounting Standard (AS-26)	Intangible Assets.
Accounting Standard (AS-27)	Financial Reporting of Interest in Joint Ventures
Accounting Standard (AS-28)	Impairment of Assets
Accounting Standard (AS-29)	Provisions, Contingent Liabilities and Contingent Assets.

A brief discussion of the above Accounting Standards issued under the Companies (Accounting Standards) Rules 2006 is given below:

### **AS-1 - Disclosure of Accounting Policies**

This standard deals with the disclosure of significant accounting policies followed in the preparation and presentation of financial statements. The purpose of this standard is to promote better understanding of financial statements by establishing the disclosure of significant accounting policies in the financial statements and the manner of doing so. Compliance with this standard should go a long way in facilitating a more meaningful comparison between financial statements of different enterprises.

The views presented in the statements of an enterprise of its state of affairs and of the profit or loss account can be significantly affected as the accounting policies followed vary from enterprise to enterprise.

All significant accounting policies adopted in the preparation and presentation of financial statements should be disclosed. The disclosure of the significant accounting policies as such should form part of the financial statements and the significant accounting policies should normally be disclosed in one place. Any change in the accounting policies which has a material effect in the current period or which is reasonably expected to have a material effect in later periods should be disclosed. In the case of a change in accounting policies which has a material effect in the current period, the amount by which any item in the financial statements is affected by such change should also be disclosed to the extent ascertainable. Where such amount is not ascertainable, wholly or in part, the fact should be indicated. If the fundamental accounting assumptions, viz. going concern, consistency and accrual are followed in financial statements, specific disclosure is not required. If a fundamental accounting assumption is not followed, the fact should be disclosed. The primary consideration is that the financial statements should give a true and fair view of the firm's income and financial position.

### **AS-2 - Valuation of Inventories**

Inventories generally constitute the second largest item after fixed assets, in the financial statements particularly of manufacturing organisations. The value attached to inventories can materially affect the operating results and the financial position. However, different basis of valuing inventories are used by different businesses and even by different undertakings within the same trade or industry. The primary issue in accounting for inventories is the determination of the value at which inventories are carried in the financial statements until the related revenues are recognised.

Inventories are defined as assets (a) held for sale in the ordinary course of business; (b) in the process of production for such sale; or (c) in the form of materials or supplies to be consumed in the production process or in the rendering of services. Inventories are thus classified as goods purchased and held for resale; finished goods produced or work-in-progress being produced by the enterprise and include materials, maintenance supplies, consumables and loose tools to be used in the production process. Net realizable value is the estimated selling price in the ordinary course of business less the estimated cost of completion and the estimated costs necessary to make the sale.

The standard specifies that inventories should be valued at the lower of cost or net realizable value. The cost of inventories means the historical cost and comprises (i) all cost of purchase, (ii) cost of conversion and (iii) other costs incurred to bring the inventories to their present location and condition. However, the following costs are excluded from the cost of inventories and are treated as expenses of the period in which they are incurred: (i) abnormal amounts of wasted materials, labour or other production costs; (ii) storage costs; (iii) administrative overheads that do not contribute to bringing the inventories to their present location and condition and (iv) selling and distribution costs.

The standard specifies the following cost formula for determining the historical cost of inventories: (i) Specific identification cost (ii) First-In-First Out and (iii) Weighted average cost.

Net realizable value should be used for valuing inventories that are damaged or that have become wholly or partially obsolete or if their selling price has declined. The practice of writing down inventories below cost to net realizable value is consistent with the view that assets should be carried in excess of amounts expected to be realised from their sale or use. When there has been a decline in the price of materials and it is estimated that the cost of finished products will exceed net realisable value, the materials are written down to net realizable value. In such case, the replacement cost of materials may be the best available measure for their net realizable value.

The standard specifies that the following disclosures should be made in the financial statements: (a) the accounting policies adopted in measuring inventories; including the cost formulas used; and (b) the total carrying amount of inventories and its classification appropriate to the enterprise.

### **AS-3 - Cash Flow Statements**

Accounting Standard-3 recommends that listed companies and other industrial commercial and business enterprises will have to provide to their shareholders and public in general, as the case may be, a cash flow statement along with balance sheet and income statement. Cash flow statement provides information that enables users to evaluate the changes in net assets of an enterprise, its financial structure and its ability to affect the amounts and timing of cash flows in order to adapt to changing circumstances and opportunities. The standard lays down the procedures and guidelines for the preparation and presentation of cash flow statements. It states that the statement should report cash flows during the period classified by operating, investing and financing activities. Cash flows from operating activities may be

reported using either (a) direct method whereby major classes of gross cash receipts and gross cash payments are disclosed; or (b) indirect method, whereby net profit or loss is adjusted for the effects of transactions of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments and items of income or expenses associated with investing or financing cash flows. An enterprise should report separately major classes of gross receipts and gross payments arising from investing and financing activities except for certain cash flows which may be reported on a net basis. Cash flows arising from the following operating, investing or financing activities may be reported on a net basis: (a) cash receipts and payments on behalf of customers when the cash flows reflect the activities of the customer rather than those of the enterprise, (b) cash receipts and payments for items in which the turnover is quick, the amounts are large, and the maturities are short. Cash flows arising from each of the following activities of a financial enterprise may also be reported on a net basis: (a) cash receipts and payments for the acceptance and repayment of deposits with a fixed maturity date; (b) the placement of deposits with and withdrawal of deposits from other financial enterprises and (c) cash advances and loans made to customers and the repayment of those advances and loans.

Cash flows arising from transactions in a foreign currency should be recorded in an enterprise's reporting currency by applying to the foreign currency amount the exchange rate between the reporting currency and foreign currency at the date of the cash flow. The cash flows associated with extra ordinary item should be classified as arising from operating, investing and financing activities as appropriate and separately disclosed. This treatment would enable the users to understand their nature and effect on the present and future cash flows of the enterprise. Cash flows from interest and dividends received and paid should each be disclosed separately. Cash flows arising from taxes and income should be separately disclosed and should be classified as cash flows from operating activities unless they can be specifically identified with financing and investing activities. Investing and financing transactions that do not require the use of cash or cash equivalents should be excluded from the cash flow statement. Such transactions should be disclosed elsewhere in the financial statements in a way that provides all the relevant information about these investing and financing activities. An enterprise needs to disclose the components of cash and cash equivalents and should present a reconciliation of the amounts in its cash flow statement with the equivalent items reported in the balance sheet.

#### **AS- 4 – Contingencies\* and Events Occurring after the Balance Sheet Date**

*\*(Pursuant to AS 29, Provisions, Contingent Liabilities and Contingent Assets, becoming mandatory, all the relevant portions of this Standard that deal with contingencies stand withdrawn except to the extent they deal with impairment of assets not covered by other Indian Accounting Standards.)*

Events that occur between the balance sheet date and the date on which the financial statements are prepared are referred to as events occurring after the balance sheet date. Such events are classified into two categories: (i) events occurring after balance sheet date that provide further evidence to the conditions which were prevailing on the balance sheet date and (ii) events occurring after the balance sheet date that are indicative of the conditions which occur subsequent to the balance sheet date.

The standard requires adjustment of assets and liabilities in the case of events of the first type and only disclosure in the case of events of the second type. However, dividends declared after the balance sheet date have to be adjusted in the accounts. Proper disclosure of events and their financial effect must be made in the financial statements.

#### **AS-5 - Net Profit or Loss for the Period, Prior Period Items and Changes in Accounting Policies**

The standard ensures uniform classification and disclosure of certain items so that profit and loss statement may be prepared on uniform basis and thereby facilitating inter-period and inter-firm comparisons. The standard recommends that all items of income and expense which are recognised in a period should be included in the determination of net profit or loss for the period. While arriving at the net profit, extraordinary items and the effects of changes in accounting estimates should also be incorporated. The profit and loss statement should disclose clearly the profit or loss from ordinary activities and extraordinary activities. Extraordinary items should be disclosed in the statement of profit and loss in a manner that its impact on current profit or loss can be perceived. However, such amounts are part of the net profit or loss for the period. When the items of income and expense within profit or loss from ordinary activities are of such size, nature or the incidence of their disclosure is relevant to explain the performance of the enterprise for the period, the nature and amount of such items should be disclosed separately.

The standard requires that the nature and amount of prior period items should be separately disclosed in the statement of profit and loss in a manner that their impact on the current profit or loss can be perceived. The effect of a change in an accounting estimate should be included in the determination of net profit or loss in (a) in the period of the change, if the change affects the period only or (b) the period of the change and future periods, if the change affects both. A change in an accounting policy should be made only if the adoption of a different accounting policy is required by stature or for compliance with an accounting standard or if it is considered that the change would result in a more appropriate presentation of the financial statements of the enterprise. A more appropriate presentation of events or transactions in the financial statements occurs when the new accounting policy results in more relevant or reliable information about the financial positions, performance or cash flows of the enterprise. Any change in an accounting policy which has a material effect should be disclosed in the financial statements.

#### **AS-6 - Depreciation Accounting**

This accounting standard makes recommendation in respect of accounting treatment of matters such as allocation of depreciable amount, estimation of useful life of a depreciable asset, change in the depreciation policy, change of historical cost of depreciable asset, revaluation of depreciable asset etc. The standard recommends that depreciation on depreciable asset should be allocated on a systematic basis to each accounting period during the useful life of the asset. The depreciation method selected should be applied consistently from period to period. A change in one method of providing depreciation to another method should be made only if the adoption of the new method is required by statute or for compliance with the

accounting standard or if it is considered that the change would result in a more appropriate preparation or presentation of financial statements. When a change in the method of depreciation is made depreciation should be recalculated in accordance with the new method from the date of the asset coming into use. The deficiency or surplus arising from retrospective recomputation of depreciation in accordance with the new method should be adjusted in the accounts in the year in which the method of depreciation is changed. The depreciation method should be selected on the basis of expected physical wear and tear of assets, obsolescence, legal or statutory limits on use of the asset. If any depreciable asset is disposed of, discarded or demolished or destroyed, the net surplus or deficiency should be disclosed in the financial statements. The following information should be disclosed in the financial statement: (i) historical cost or other amount substituted for historical cost of each class of depreciable asset; (ii) total depreciation for the period for each class of assets; (iii) the related accumulated depreciation; (iv) depreciation methods used; and (v) depreciable rates or the useful life of the assets, if they are different from the principal rates specified in Schedule XIV.

#### **AS-7 - Construction Contracts**

The objective of this Accounting Standard is to prescribe the accounting treatment of revenue and costs associated with construction contracts. The Standard prescribes only percentage of completion method for recognising the revenue, which justifies the accrual system of accounting.

A construction contract is a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology and function or their ultimate purpose or use.

Construction contracts are formulated in a number of ways which for the purposes of this standard are classified as fixed price contracts and cost plus contracts. Some construction contracts may be a mix of both a fixed price contract and a cost plus contract.

##### *Combination and Segmenting Construction Contracts*

When a contract covers a number of assets, the construction of each asset should be treated as a separate construction contract when:

- (a) separate proposals have been submitted for each asset;
- (b) each asset has been subject to separate negotiation and the contractor and customer have been able to accept or reject that part of the contract relating to each asset; and
- (c) the costs and revenues of each asset can be identified.

A group of contracts, whether with a single customer or with several customers, should be treated as a single construction contract when:

- (a) the group of contracts is negotiated as a single package;
- (b) the contracts are so closely interrelated that they are, in effect, part of a single project with an overall profit margin; and
- (c) the contracts are performed concurrently or in a continuous sequence.

A contract may provide for the construction of an additional asset at the option of the customer or may be amended to include the construction of an additional asset. The construction of the additional asset should be treated as a separate construction contract when:

- (a) the asset differs significantly in design, technology or function from the asset covered by the original contract; or
- (b) the price of the asset is negotiated without regard to the original contract price.

#### *Contract Revenue*

Contract Revenue should comprise the initial amount of revenue e agreed as per contract and variations in contract work, claims and incentive payments .

#### *Contract Costs*

Contract costs should comprise:

- (a) costs that relate directly to the specific contract;
- (b) costs that are attributable to contract activity in general and can be allocated to the contract; and
- (c) such other costs as are specifically chargeable to the customer under the terms of the contract.

#### *Recognition of Contract Revenue and Expenses*

When the outcome of a construction contract can be estimated reliably, contract revenue and contract costs associated with the construction contract should be recognised as revenue and expenses respectively by reference to the stage of completion of the contract activity at the reporting date. Any expected loss on the construction contract should be recognised immediately as an expense.

The recognition of revenue and expense by reference to the stage of completion of a contract is often referred to as percentage of completion method. Under this method, contract revenue is matched with the contract costs incurred in reaching the stage of completion, resulting in the reporting of revenue, expenses and profit which can be attributed to the proportion of work completed. This method provides useful information on the extent of contract activity and performance during a period.

#### *Recognition of Expected Losses*

When it is probable that total contract cost will exceed total contract revenue, the expected loss should be recognised as an expense immediately.

An enterprise should disclose:

- (a) the amount of contract revenue recognised as revenue in the period;
- (b) the methods used to determine the contract revenue recognised in the period; and
- (c) the methods used to determine the stage of completion of contracts in progress.

**AS-8 - Accounting for Research and Development**

*Note: Withdrawn pursuant to AS 26 becoming mandatory.*

**AS-9 - Revenue Recognition**

This standard deals with the basis for recognition of revenue in the statement of profit and loss of an enterprise. It lays down the conditions to recognise revenue by sale of goods, rendering of services, resources yielding interest, royalties and dividends. Revenue should be recognised for sale of goods or services only when the collection is reasonably assured and (i) the property in goods is transferred from seller to buyer (ii) there is no uncertainty regarding the amount of consideration that will be realised from sale of goods. In the case of services rendered either completed service contract method or proportionate service contract method may be adopted for revenue recognition. In the case of revenue by way of interest, the credit is taken on a time proportion basis taking into account the amount outstanding and the rate applicable. In the case of royalties, revenue is recognised on approval basis in accordance with the terms of the relevant agreement. The revenue is recognised for dividend once the right to receive dividend is established.

**AS-10 - Accounting for Fixed Assets**

Financial statements disclose information regarding fixed assets such as land and building, plant and machinery, vehicles, furniture and fittings, goodwill, patents, trade marks and designs etc. This standard deals with accounting for these fixed assets. The cost of fixed asset should comprise its purchase price and any attributable cost of bringing the asset to its working condition for its intended use. Any trade discounts and rebates are deducted in arriving at the purchase price. Finance cost relating to borrowed funds upto the completion of construction or acquisition of assets are also included in the cost of asset. Administrative and other general overhead expenses are usually excluded from the cost of fixed assets. In case of self constructed assets, only direct costs are included in the cost of the asset. In an exchange of asset, the cost of assets given up should be taken as the value of new asset. Sometimes, market value of such assets is also taken when circumstances permit. Subsequent expenditures related to an item of fixed asset should be added to its book value only if they increase the future benefits from the existing asset. Fixed asset should be eliminated from the financial statements on disposal or when no further benefit is expected from its use.

On revaluation of assets in books, the asset at net value is revalued and similar increase in gross value is made without changing depreciation figure. When a fixed asset is revalued upwards, accumulated depreciation existing at the date of revaluation should not be credited to profit and loss account. An increase in net book value arising on revaluation of fixed assets should be credited directly to owner's interest under revaluation reserve and should not be used for any purpose except to write off decrease in value of assets. The following information should be disclosed in the financial statements:

- (i) Gross and net book values of fixed assets at the beginning and at the end of the accounting period-showing additions, disposals, acquisition etc.

- (ii) Proper disclosure should also be made regarding expenditures incurred in the course of construction or acquisition.
- (iii) Information in respect of revalued assets should include revalued amount substituted for historical cost of fixed assets, the method adopted to compute the revalued amounts, the nature of indices used, the year of any appraisal made and whether an external valuer was involved etc.

#### **AS-11 - The Effects of Changes in Foreign Exchange Rates**

This Standard should be applied in accounting for transactions and balances in foreign currencies and in translating the financial statements of foreign operations.

A foreign currency transaction should be recorded, on initial recognition in the reporting currency, by applying to the foreign currency amount the exchange rate between the reporting currency and the foreign currency at the date of the transaction.

At each balance sheet date reporting should be made as follows:

- (a) foreign currency monetary items should be reported using the closing rate.
- (b) non-monetary items which are carried in terms of historical cost denominated in a foreign currency should be reported using the exchange rate at the date of the transaction; and
- (c) non-monetary items which are carried at fair value or other similar valuation denominated in a foreign currency should be reported using the exchange rates that existed when the values were determined.

Exchange differences arising on the settlement of monetary items or on reporting an enterprise's monetary items at rates different from those at which they were initially recorded during the period, or reported in previous financial statements, should be recognised as income or as expenses in the period in which they arise. However, exchange differences arising on a monetary item that, in substance, forms part of an enterprise's net investment in a non-integral foreign operation should be accumulated in a foreign currency translation reserve in the enterprise's financial statements until the disposal of the net investment, at which time they should be recognised as income or as expenses. On the disposal of a non-integral foreign operation, the cumulative amount of the exchange differences which have been deferred and which relate to that operation should be recognised as income or as expenses in the same period in which the gain or loss on disposal is recognised.

The method used to translate the financial statements of a foreign operation depends on the way in which it is financed and operates in relation to the reporting enterprise. For this purpose, foreign operations are classified as either "integral foreign operations" or "non-integral foreign operations".

When there is a change in the classification of a foreign operation, the translation procedures applicable to the revised classification should be applied from the date of the change in the classification.

An enterprise may enter into a forward exchange contract or another financial instrument that is in substance a forward exchange contract, which is not intended for

trading or speculation purposes, to establish the amount of the reporting currency required or available at the settlement date of a transaction. The premium or discount arising at the inception of such a forward exchange contract should be amortised as expense or income over the life of the contract. Exchange differences on such a contract should be recognised in the statement of profit and loss in the reporting period in which the exchange rates change. Any profit or loss arising on cancellation or renewal of such a forward exchange contract should be recognised as income or as expense for the period.

An enterprise should disclose:

- (a) the amount of exchange differences included in the net profit or loss for the period and
- (b) net exchange differences accumulated in foreign currency translation reserve as a separate component of shareholders' funds, and a reconciliation of the amount of such exchange differences at the beginning and end of the period.

#### **AS-12 - Accounting for Government Grants**

Government grants are assistance by Government in cash or kind to an enterprise for past or future compliances with certain conditions. Such grants are sometimes called by other names such as subsidies, cash incentives, duty drawback etc. There are two approaches to the treatment of Government grants. The first one is 'capital approach' under which a grant is treated as part of the shareholders' funds and the second is the 'income approach' under which a grant is taken to income over one or more periods. Government grants related to specific fixed assets should be presented in the balance sheet by showing the grant as deduction from the gross value of the assets. Where the grant covers the total cost of the assets, the assets should be shown in the balance sheet at a nominal value. Alternatively, the grant may be treated as deferred income and allocated in the profit and loss account over the useful life of the assets. Grants related to non-depreciable asset should be credited to capital reserve.

Government grants related to revenue should be recognised on a systematic basis in the profit and loss account over the periods necessary to match them with related costs which they are intended to compensate. Government grants of the nature of promoters' contribution should be credited to capital reserve and treated as a part of shareholders' funds. The standard recommends the following disclosures in the financial statements: (i) the accounting policy adopted for government grants, including the methods of presentation of financial statements; (ii) the nature and extent of government grants recognised in the financial statements, including grants of non-monetary assets given at a concessional rate or free of cost.

#### **AS-13 - Accounting for Investments**

The standard deals with accounting for investments in the financial statement of enterprises and related disclosures. Investments are assets held by an enterprise for earning income by way of dividends, interest and rentals for capital appreciation or for other benefits to the investing enterprise. Assets held as stock-in-trade are not investments. An enterprise should disclose current investments and long-term

investments distinctly in its financial statements. The cost of an investment should include acquisition charges such as brokerage, fees and duties. If an investment is acquired, or partly acquired, by issue of shares or other securities, the acquisition cost should be the fair value of the securities issued. If an investment is acquired in exchange for another asset, the acquisition cost of the investment should be determined by reference to the fair value of asset given up.

Investments classified as current investments should be stated at lower of cost and fair value while long-term investments be stated at cost with provision for diminution to recognise a decline. Any reduction in the carrying amount and any reversals of such reductions should be charged or credited to the profit and loss statement. On disposal of an investment, the difference between the carrying amount and net disposal proceeds should be charged or credited in the profit and loss statement. When disposing of a part of the holding of an individual investment, the carrying amount should be allocated to that part and is to be determined on the basis of the average carrying amount of the total holding of the investment. The standard requires the disclosure of accounting policies for determination of carrying amounts of investments, classification of investments, the amount included in the income statement in respect of interest, dividends, rentals on investments, profits and losses on sale of current and long-term investments.

#### **AS-14 - Accounting for Amalgamations**

This standard deals with accounting for amalgamations and treatment of any resultant goodwill or reserves. The standard classifies amalgamation into two categories i.e. (i) amalgamation in the nature of merger and (ii) amalgamation in the nature of purchase. In the first category where there is genuine pooling not merely of assets and liabilities of the amalgamating companies but also of the shareholders' interests and of the business of these companies. In the second category are those amalgamations which are in effect a mode by which one company acquires another company and as a consequence, the shareholders of the company which is acquired, normally do not continue to have proportionate share in the equity of the combined company. Also the business of the company which is acquired is not intended to be continued.

When an amalgamation is in the nature of merger, it should be accounted for under the pooling of interest method and an amalgamation in the nature of purchase, the method is designated as purchase method. In preparing transferee company's financial statements under pooling interest method, the assets, liabilities and reserves (whether capital or revenue or arising on revaluation) of the transferor company should be recorded at their existing carrying amounts and in the same form as at the date of the amalgamation. The difference between the amount recorded as share capital issued and the amount of the share capital of the transferor company should be adjusted in reserves. In preparing the transferee company's financial statements, under purchase method, the assets and liabilities of the transferor company should be incorporated at their existing carrying amounts, or alternatively, the consideration should be allocated to individual identifiable assets and liabilities on the basis of their fair values at the date of amalgamation. The reserves whether capital or revenue or arising on revaluation of the transferor company other than the statutory reserves, should not be included in the financial statements of the transferee company. Any excess of the amount of consideration over the value of net assets of the transferor

company acquired by the transferee company should be recognised in the balance sheet of the transferee company as goodwill and if the amount of consideration is lower than the net value of assets, the difference is to be treated as capital reserve.

### **AS-15 - Employee Benefits**

This Standard prescribes accounting and disclosure for all employee benefits, except employee share-based payments.

The Standard specifies the following four categories of employee benefits:

- (i) *Short-term employee benefits*, such as wages, salaries and social security contributions (e.g., contribution to an insurance company by an employer to pay for medical care of its employees), paid annual leave, profit-sharing and bonuses (if payable within twelve months of the end of the period) and non-monetary benefits (such as medical care, housing, cars and free or subsidised goods or services) for current employees. The Standard requires that an enterprise should recognise the undiscounted amount of short-term employee benefits when an employee has rendered service in exchange for those benefits.
- (ii) *Post-employment benefits*, such as gratuity, pension, other retirement benefits, post-employment life insurance and post-employment medical care. These are classified as either defined contribution plans or defined benefit plans depending on the economic substance of the plan. Under defined contribution plans, the enterprise's obligation is limited to the amount that it agrees to contribute to the fund and in consequence, actuarial risk (that benefits will be less than expected) and investment risk (that assets invested will be insufficient to meet expected benefits) fall on the employee. All other post-employment benefit plans are defined benefit plans. Accounting for defined benefit plans is complex because actuarial assumptions are required to measure the obligation and the expense and there is a possibility of actuarial gains and losses. Moreover, the obligations are measured on a discount basis since they may be settled in many years after the employees render the related service. Defined benefit plans may be unfunded, or they may be wholly or partly funded by contributions by an enterprise.
- (iii) *Other long-term employee benefits*, including long-service leave or sabbatical leave, jubilee or other long-service benefits, long-term disability benefits and, if they are not payable wholly within twelve months after the end of the period, profit-sharing, bonuses and deferred compensation. The Standard requires a simplified method of accounting for other long-term employee benefits than for post-employment benefits by requiring that past service cost should be recognised immediately
- (iv) *Termination benefits*. Termination benefits are employee benefits payable as a result of either: an enterprise's decision to terminate an employee's employment before the normal retirement date; or an employee's decision to accept voluntary redundancy in exchange for those benefits (voluntary retirement).

**AS-16 - Borrowing Cost**

Borrowing costs are interest and other costs incurred by an enterprise in connection with borrowing of funds e.g. interest and commitment charges on bank borrowings and other short-term and long-term borrowings; amortization of discounts or premiums relating to borrowings; amortization of ancillary costs incurred in connection with the arrangement of borrowings etc.

Borrowing costs that are directly attributable to the acquisition, construction or production of qualifying asset should be capitalised as part of the cost of that asset. Other borrowing costs should be recognised as an expense in the period in which they are incurred. To the extent that funds are borrowed especially for the purpose of obtaining a qualifying asset, the amount of borrowing cost eligible for capitalization on that asset should be determined as the actual borrowing costs incurred on that borrowing. To the extent that funds are borrowed generally and used for the purpose of obtaining a qualifying asset, the amount of borrowing costs eligible for capitalization should be determined by applying a capitalization rate to the expenditure on that asset. The capitalization rate would be the weighted average of the borrowing costs applicable to the borrowings of the enterprise that are outstanding during the period, other than borrowings made specifically for the purpose of obtaining a qualifying asset. The amount of borrowing costs capitalized during a period should not exceed the amount of borrowing costs incurred during that period. When the carrying amount or the expected ultimate cost of the qualifying asset exceeds its recoverable amount or net realizable value, the carrying amount is written down or written off in accordance with requirements of other accounting demands. In certain circumstances, the amount of the written down or written off is written back in accordance with those of other accounting standards.

Capitalisation of borrowing costs should be suspended during the extended period in which active development is interrupted. Capitalization of borrowing costs should cease when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are complete. When the construction of a qualifying asset is completed in parts and a completed part is capable of being used while construction continues for the other parts, capitalization of borrowing costs in relation to a part should cease when substantially all the activities necessary to prepare that part for its intended use or sale are complete. The financial statements should disclose (a) the accounting policy adopted for borrowing costs and (b) the amount of borrowing costs capitalized during the period.

**AS-17 - Segment Reporting**

The objective of this standard is to establish principles for reporting financial information, about the different types of products and services an enterprise produces and the different geographical areas in which it operates. The standard is applied in presenting general purpose financial statements. The dominant source and nature of risks and returns of an enterprise should govern whether its primary segment reporting format will be business segments or geographical segments. If the risks and returns of an enterprise are affected predominantly by differences in the products and services it produces, its primary format for reporting segment information should be business segments, with secondary information reported geographically. Similarly, if

the risks and returns of the enterprise are affected predominantly by the fact that it operates in different countries or other geographical areas; its primary format for reporting segment information should be geographical segments, with secondary information reported for groups or related products and services.

Internal organisation and management structure of an enterprise and its system of internal financial reporting to the board of directors and the chief executive officer should normally be the basis for identifying the predominant source and nature of risks and differing rates of return facing the enterprise. Business and geographical segments of an enterprise for external reporting purposes should be those organizational units for which information is reported to the board of directors and to the chief executive officer for the purpose of evaluating the units performance and for making decisions about future allocation of resources.

A business segment or geographical segment should be identified as a reportable segment if (a) its revenue from sales to external customers and from transactions with other segment is 10 per cent or more of the total revenue, external and internal of all segments; or (b) its segment result, whether profit or loss is 10 per cent or more of (i) the combined result of all segments in profits or (ii) the combined results of all segments in loss which is greater in absolute amount; or (c) its segment assets are 10 per cent or more of the total assets of all segments.

A segment identified as a reportable segment in the immediately preceding period because it satisfied the relevant 10 per cent thresholds should continue to be a reportable segment for the current period notwithstanding that its revenue result and asset all no longer meet the 10 per cent thresholds. If a segment is identified as a reportable segment in the current period because it satisfies the relevant 10 per cent thresholds, preceding period segment data that is presented for comparative purposes should, unless it is impracticable to do so, be restated to reflect the newly reportable segment as a separate segment, even if that segment did not satisfy the 10 per cent thresholds in the preceding period.

Segment information should be prepared in conformity with the accounting policies adopted for preparing and presenting the financial statements of the enterprise as a whole. Assets and liabilities that relate jointly to two or more segments if, and only if, their related revenues and expenses also are allocated to those segments.

#### **AS-18 - Related Party Disclosures**

This standard is applied in reporting related party relationships and transactions between a reporting enterprise and its related parties. Related party disclosure requirements do not apply in circumstances where providing such disclosure would conflict with the reporting enterprise's duties of confidentiality as specifically required in terms of a statute or by any regulator. It is stated that no disclosure is required in consolidated financial statements in respect of intra-group transactions. Also no disclosure is required in the financial statement of state controlled enterprises as regards related party relationship with other state controlled enterprises and transactions with such enterprises.

If there have been transactions between related parties, during the existence of a

related party relationship the reporting enterprise should disclose:

- (i) the name of the transacting related party;
- (ii) a description of the relationship between the parties;
- (iii) description of the nature of the transactions;
- (iv) volume of transactions either as an amount or as an appropriate proportion;
- (v) any other elements of the related party transactions necessary for an understanding of the financial statements;
- (vi) the amounts or appropriate proportions of outstanding items pertaining to related parties at the balance sheet date and provision for doubtful debts due from such parties at that date; and
- (vii) the amounts written off or written back in the period in respect of debts due from or to related parties. Items of a similar nature may be disclosed in aggregate by type of related party.

#### **AS-19 - Leases**

The objective of this standard is to prescribe, for lessees and lessors, the appropriate accounting policies and disclosures in relation to finance leases and operating leases. A lease is classified as a finance lease if it transfers substantially all the risks and rewards incident to ownership, title may or may not eventually be transferred. A lease is classified as an operating lease if it does not transfer substantially all the risks and rewards incident to ownership.

##### *Leases in the Financial Statement of Lessees*

- (a) *Financial Leases:* In this case at the inception of a financial lease, the lessee should recognise the lease as an asset and a liability. Such recognition should be at an amount equal to the fair value of the leased asset at the inception of the lease. However, if the fair value of the leased asset exceeds the present value of the minimum lease payments from the stand point of the lessee, the amount recorded as an asset and a liability should be the present value of the minimum lease payments from the stand point of the lessee. The lease payments should be apportioned between the finance charge and the reduction of the outstanding liability. The finance charge should be allocated to periods during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability of each period. Also a finance lease gives rise to a depreciation expense for the asset as well as finance expense for each accounting period. If there is no reasonable certainty that the lessee will obtain ownership by the end of the lease term, the asset should be fully depreciated over the lease term or its useful life whichever is shorter.
- (b) *Operating Leases:* Lease payments under an operating lease should be recognised as an expense in the statement of profit and loss on a straight line basis over the lease term unless another systematic basis is more representative of the time pattern of the user's benefit.

*Leases in the Financial Statements of Lessors*

- (a) *Finance Leases:* The lessor should recognise assets given under a finance lease in its balance sheet as a receivable at an amount equal to the net investment in the lease. The recognition of finance income should be based on a pattern reflecting a constant periodic rate of return on the net investment of the lessor outstanding in respect of the finance lease.
- (b) *Operating Leases:* The lessor should present an asset given under operating lease in its balance sheet under fixed assets. The lease income from operating leases should be recognised in the statement of profit and loss on a straight line basis over the lease term, unless another systematic basis is more representative of the time pattern in which benefit derived from the use of the leased asset is diminished. The depreciation on leased assets should be on a basis consistent with the normal depreciation policy of the lessor company.

*Sale and lease back transaction*

If a sale and lease back transaction results in a finance lease, any excess or deficiency of sales proceeds over the carrying amount should not be immediately recognised as income or loss in the financial statements of a seller lessee, instead it should be deferred and amortised over the lease term in proportion to the depreciation of the leased asset. If a sale and leaseback transaction results in an operating lease, and it is clear that the transaction is established at fair value, any profit or loss should be recognised immediately.

**AS-20 - Earnings Per Share**

Earning per share (EPS) is a financial ratio that gives the information regarding earnings available to each equity share. This accounting standard gives computational methodology for determination and presentation of earnings per share. An enterprise should present basic and diluted earning per share on the face of the statement of profit and loss account for each class of equity shares that has a different right to share in the net profit for the period. An enterprise should present basic and diluted earning per share with equal prominence for all periods presented. The standard also requires that an enterprise to present basic and diluted earnings per share even if the amount disclosed are negative i.e. a loss per share.

Basic earning per share should be calculated by dividing the net profit or loss for the period attributable to equity shareholders by the weighted average number of equity shares outstanding during the period. For the purpose of calculating basic earnings per share, the net profit or loss for the period attributable to equity shareholders should be the net profit or loss for the period after deducting preference dividends and any attributable tax thereto. For the purpose of calculating basic earnings per share, the number of equity shares should be the weighted average number of equity shares outstanding during the period. The weighted average number of equity shares outstanding during the period reflects the fact that the amount of shareholders' capital may have varied during the period as a result of a larger or lesser number of shares outstanding at any time. It is the number of equity shares outstanding at the beginning of the period, adjusted by the number of equity

shares bought back or issued during the period multiplied by the time-weighting factor.

Diluted earnings per share is calculated when there are potential equity shares in the capital structure of the enterprise. Potential equity share are those financial instruments which entitle the holder to the right of equity shares like convertible debentures, convertible preference shares, options warrants etc. For the purpose of calculating diluted earnings per share, the net profit or loss for the period attributable to equity shareholders and the weighted average number of shares outstanding during the period should be adjusted for the effects of all dilutive potential equity shares.

The weighted average number of equity shares outstanding during the period is increased by the weighted average number of additional equity shares which would have been outstanding assuming the conversion of all dilutive potential equity shares.

Potential equity shares should be treated as dilutive when, and only when, their conversion to equity shares would decrease net profit per share from continuing ordinary operations. Potential equity shares are anti-dilutive when their conversion to equity shares would increase earnings per share from continuing ordinary activities or decrease loss per share from continuing ordinary activities. The effects of anti-dilutive potential equity shares are ignored in calculating diluted earnings per share.

An enterprise should also disclose the following:

- (i) The amounts used as the numerators in calculating basic and diluted earnings per share, and a reconciliation of those amounts to the net profit or loss for the period;
- (ii) The weighted average number of equity shares used as the denominator in calculating basic and diluted earnings per share, and a reconciliation of these denominators to each other; and
- (iii) The nominal value of shares along with the earnings per share figures.

#### **AS-21 - Consolidated Financial Statements**

The objective of this standard is to lay down principles and procedures for preparation and presentation of consolidated financial statements and for accounting for investments in subsidiaries in separate financial statements. Consolidated financial statements are presented by a parent (also known as holding enterprise) to provide financial information about the economic activities of its group. Consolidated financial statements are the financial statements of a group presented as those of a single enterprise.

Consolidated financial statements normally include consolidated balance sheet, consolidated statement of profit and loss, and notes, other statements and explanatory material that form an integral part thereof. Consolidated cash flow statement is presented in case a parent presents its own cash flow statement. The consolidated financial statements are presented, to the extent possible, in the same format as that adopted by the parent for its separate financial statements. In preparing consolidated financial statements, the financial statements (balance sheet

and profit and loss account) of the parent and its subsidiaries should be combined on a line by line basis by adding together like items of assets, liabilities, income and expenses.

For the purpose of consolidation the financial statements are required to be drawn up to the same reporting date. If it is not practicable to draw up the financial statements of one or more subsidiaries to such date and, accordingly, those financial statements are drawn up to different reporting dates, adjustments should be made for the effects of significant transactions or other events that occur between those dates and the date of the parent's financial statements. In any case, the difference between reporting dates should not be more than six months.

Consolidated financial statements should be prepared using uniform accounting policies for like transactions and other events in similar circumstances. If it is not practicable to use uniform accounting policies in preparing the consolidated financial statements, then the items in which different accounting policies have been followed should be disclosed.

Minority interests should be presented in the consolidated balance sheet separately from liabilities and the equity of the parent's shareholders. The following disclosures should also be made in consolidated financial statements:

- (i) a list of all subsidiaries including the name, country of incorporation or residence, proportion of ownership interest and, if different, proportion of voting power held;
- (ii) where applicable:
  - the nature of the relationship between the parent and a subsidiary, if the parent does not own, directly or indirectly through subsidiaries, more than one-half of the voting power of the subsidiary;
  - the effect of the acquisition and disposal of subsidiaries on the financial position at the reporting date, the results for the reporting period and on the corresponding amounts for the preceding period; and
  - the names of the subsidiary(ies) of which reporting date(s) is/are different from that of the parent and the difference in reporting dates.

#### **AS-22 - Accounting for Taxes on Income**

This Accounting Standard prescribes the accounting treatment for taxes on income. Traditionally amount of tax payable is determined on the profit/ loss computed as per income-tax laws. According to this accounting standard, tax on income is determined on the principle of accrual concept. According to this concept, tax should be accounted in the period in which corresponding revenue and expenses are accounted; in simple words tax shall be accounted on accrual basis; not on liability to pay basis.

This Standard should be applied in accounting for taxes on income. Accounting income (loss) is the net profit or loss for a period, as reported in the statement of profit and loss, before deducting income tax expense or adding income tax saving.

Accounting income is determined based on generally accepted accounting principles to reflect a true and fair view of operations of an enterprise.

Taxable income (tax loss) is the amount of the income (loss) for a period, determined in accordance with the tax laws, based upon which income tax payable (recoverable) is determined. Tax expense (tax saving) is the aggregate of current tax and deferred tax charged or credited to the statement of profit and loss for the period.

Current tax is the amount of income tax determined to be payable (recoverable) in respect of the taxable income (tax loss) for a period and deferred tax is the tax effect of timing differences.

The differences between taxable income and accounting income can be classified into permanent differences and timing differences. Permanent differences are those differences between taxable income and accounting income which originate in one period and do not reverse subsequently. Timing differences are those differences between taxable income and accounting income for a period that originate in one period and are capable of reversal in one or more subsequent periods. Timing differences arise because the period in which some items of revenue and expenses are included in taxable income do not coincide with the period in which such items of revenue and expenses are included or considered in arriving at accounting income.

Tax expense for the period, comprising current tax and deferred tax, should be included in the determination of the net profit or loss for the period. Deferred tax should be recognized for all the timing differences, subject to the consideration of prudence in respect of deferred tax assets.

The following disclosure procedure should be followed:

- (i) An enterprise should offset assets and liabilities representing current tax if the enterprise:
  - (a) has a legally enforceable right to set off the recognized amounts; and
  - (b) intends to settle the asset and the liability on a net basis.
- (ii) An enterprise should offset deferred tax assets and deferred tax liabilities if:
  - (a) the enterprise has a legally enforceable right to set off assets against liabilities representing current tax; and
  - (b) the deferred tax assets and the deferred tax liabilities relate to taxes on income levied by the same governing taxation laws.
- (iii) Deferred tax assets and liabilities should be distinguished from assets and liabilities representing current tax for the period. Deferred tax assets and liabilities should be disclosed under a separate heading in the balance sheet of the enterprise, separately from current assets and current liabilities.
- (iv) The break-up of deferred tax assets and deferred tax liabilities into major components of the respective balances should be disclosed in the notes to accounts.

- (v) The nature of the evidence supporting the recognition of deferred tax assets should be disclosed, if an enterprise has unabsorbed depreciation or carry forward of losses under tax laws.

### **AS-23 - Accounting for Investments in Associates in Consolidated Financial Statements**

An associate is an enterprise in which the investor has significant influence and which is neither a subsidiary nor a joint venture of the investor. Significant influence may be gained by share ownership, statute or agreement.

The existence of significant influence by an investor is identified in one or more of the following criteria:

- Representation on the board of directors.
- Participation in policy making processes;
- Material transactions between the investor and the investee.
- Interchange of managerial personnel.
- Provision of essential technical information.

Where an associate presents consolidated financial statements, the results and net assets to be taken into account are those reported in that associate's consolidated financial statements.

The carrying amount of investment in an associate should be reduced to recognize a decline, other than temporary, in the value of the investment, such reduction being determined and made for each investment individually.

The investor should also disclose in its financial statements the following:

- (i) An appropriate description of associates including the proportion of ownership interest.
- (ii) Investments in associates accounted for using the equity method should be classified as long-term investments and disclosed separately in the consolidated balance sheet. The investor's share of the profits or losses of such investments should be disclosed separately in the consolidated statement of profit and loss. The investor's share of any extraordinary or prior period items should also be separately disclosed.
- (iii) The name(s) of the associate(s) of which reporting date(s) is/are different from that of the financial statements of an investor and the differences in reporting dates.
- (iv) In case an associate uses accounting policies other than those adopted for the consolidated financial statements for like transactions and events in similar circumstances and it is not practicable to make appropriate adjustments to the associate's financial statements, the fact should be disclosed along with a brief description of the differences in the accounting policies.

**AS-24 - Discontinuing Operations**

As per the standard, discontinuing operation is a component of an enterprise:

- (a) that the enterprise, pursuant to a single plan, is:
  - (i) disposing of substantially in its entirety, such as by selling the component in a single transaction or by demerger or spin-off of ownership of the component to the enterprise's shareholders; or
  - (ii) disposing of piecemeal, such as by selling off the component's assets and settling its liabilities individually; or
  - (iii) terminating through abandonment; and
- (b) that represents a separate major line of business or geographical area of operations; and
- (c) that can be distinguished operationally and for financial reporting purposes.

With respect to a discontinuing operation, the initial disclosure event is the occurrence of one of the following, whichever occurs earlier:

- (i) Entering into an agreement to sell substantially all of the assets of the discontinuing operation.
- (ii) Approving and announcing of the discontinuance plan.

An enterprise should include the following information relating to a discontinuing operation in its financial statements beginning with the financial statements for the period in which the initial disclosure event occurs:

- (i) A description of the discontinuing operation(s);
- (ii) The business or geographical segment(s) :
- (iii) The date and nature of the initial disclosure event;
- (iv) The date or period in which the discontinuance is expected to be completed if known or determinable;
- (v) The carrying amounts, as of the balance sheet date, of the total assets to be disposed of and the total liabilities to be settled;
- (vi) The amounts of revenue and expenses in respect of the ordinary activities attributable to the discontinuing operation during the current financial reporting period;
- (vii) The amount of pre-tax profit or loss from ordinary activities attributable to the discontinuing operation during the current financial reporting period, and the income tax expense related thereto;
- (viii) The amount of net cash flows attributable to the operating, investing, and financing activities of the discontinuing operation during the current financial reporting period.

When an enterprise disposes of assets or settles liabilities attributable to a discontinuing operation or enters into binding agreements for the sale of such assets or the settlement of such liabilities, the following information is to be disclosed:

- (i) Amount of gain or loss recognized on the disposal of assets or settlement of liabilities and related income tax; and
- (ii) Net selling price from the sale of those net assets for which the enterprise has entered into binding sale agreements, the expected timing of receipt of those cash flows and the carrying amount of those net assets.

### **AS-25 - Interim Financial Reporting**

An interim financial report means a financial report containing either a complete set of financial statements or a set of condensed financial statements for an interim period.

An interim financial report should include, at a minimum, the following components:

- (i) Condensed balance sheet;
- (ii) Condensed statement of profit and loss;
- (iii) Condensed cash flow statement; and
- (iv) Selected explanatory notes.

An enterprise should apply the same accounting policies in the interim financial statements as are applied in the annual financial statements. If an enterprise opts to prepare and present a complete set of financial statements in the interim financial reporting, it should be prepared in the format and as per the contents and requirements of annual financial statements.

The following minimum disclosure of notes and explanatory statements should be made in the interim financial report.

- (i) A statement that the same accounting policies are followed in the interim financial statements as those followed in the most recent annual financial statements or, if those policies have been changed, a description of the nature and effect of the change.
- (ii) Explanatory comments about the seasonality of interim operations.
- (iii) Unusual factors that affected assets, liabilities, equity, net income and cash flows.
- (iv) The effects of changes in estimates.
- (v) Change in debt and equity through issuance, buy-back and repayments.
- (vi) Details of dividend payment.
- (vii) Segment revenue, segment capital employed and segment result for business segments or geographical segments, whichever is the primary basis of segment reporting.

- (viii) The effect of changes in the composition of the enterprise during the interim period, such as amalgamations, acquisition or disposal of subsidiaries and long-term investments, restructurings, and discontinuing operations.
- (ix) Material changes in contingent liabilities since the last annual balance sheet date.

Interim reports should include interim financial statements for the following periods:

- (a) Balance sheet as of the current interim period and a comparative balance sheet as of the end of the immediately preceding financial year;
- (b) Statements of profit and loss for the current interim period and cumulatively for the current financial year to date, with comparative statements of profit and loss for the comparable interim periods (current and year-to-date) of the immediately preceding financial year;
- (c) Cash flow statement cumulatively for the current financial year to date, with a comparative statement for the comparable year-to-date period of the immediately preceding financial year.

In deciding how to recognize, measure, classify, or disclose an item for interim financial reporting purposes, materiality should be assessed in relation to the interim period financial data. In making assessments of materiality, it should be recognized that interim measurements may rely on estimates to a greater extent than measurements of annual financial data

An enterprise should apply the same accounting policies in its interim financial statements as are applied in its annual financial statements, except for accounting policy changes made after the date of the most recent annual financial statements that are to be reflected in the next annual financial statements. However, the frequency of an enterprise's reporting (annual, half-yearly, or quarterly) should not affect the measurement of its annual results. To achieve that objective, measurements for interim reporting purposes should be made on a year-to-date basis.

Revenues that are received seasonally or occasionally within a financial year should not be anticipated or deferred as of an interim date if anticipation or deferral would not be appropriate at the end of the enterprise's financial year. However costs that are incurred unevenly during an enterprise's financial year should be anticipated or deferred for interim reporting purposes if, and only if, it is also appropriate to anticipate or defer that type of cost at the end of the financial year.

#### **AS-26 - Intangible Assets**

The Standard defines an intangible asset as an identifiable "non-monetary asset, without physical substance, held for use in the production or supply of goods or services, for rental to others, or for administrative purposes."

An intangible asset should be recognised if, and only if:

- (a) it is probable that the future economic benefits that are attributable to the asset will flow to the enterprise; and

- (b) the cost of the asset can be measured reliably.

An enterprise should assess the probability of future economic benefits using reasonable and supportable assumptions that represent best estimate of the set of economic conditions that will exist over the useful life of the asset. As per the Standard an intangible asset should initially be measured at cost.

Internally generated goodwill should not be recognized as an asset. Intangible asset arising from research (or from the research phase of an internal project) should not be recognized as an asset. Expenditure on research (or on the research phase of an internal project) should be recognized as an expense when it is incurred.

An intangible asset arising from development (or from the development phase of an internal project) should be recognized if, and only if, an enterprise can demonstrate all of the following:

- (a) the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- (b) its intention to complete the intangible asset and use or sell it;
- (c) its ability to use or sell the intangible asset;
- (d) how the intangible asset will generate probable future economic benefits. Among other things, the enterprise should demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- (e) the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- (f) its ability to measure the expenditure attributable to the intangible asset during its development reliably.

This Accounting Standard takes the view that expenditure on internally generated brands, mastheads, publishing titles, customer lists and items similar in substance cannot be distinguished from the cost of developing the business as a whole. Therefore, such items are not recognized as intangible assets.

Expenditure on an intangible item that was initially recognized as an expense by a reporting enterprise in previous annual financial statements or interim financial reports should not be recognized as part of the cost of an intangible asset at a later date.

Enterprises may incur expenditure on intangible assets after these intangibles are recognized/recorded in the book. The standard prescribes the conditions when such expenses should be capitalized and included in the cost of intangible.

- (a) Subsequent expenses increase the future economic benefits of intangible;
- (b) Subsequent expenses can be measured and attributed to the asset reliably.

If these conditions are not met, the subsequent expenses after initial recognition shall be expensed and not be capitalized.

After initial recognition, an intangible asset should be carried at its cost less any accumulated amortisation and an accumulated impairment losses.

The Accounting Standard states that the depreciable amount of an intangible asset should be allocated on a systematic basis over the best estimate of its useful life. There is a rebuttable presumption that the useful life of an intangible asset will not exceed ten years from the date when the asset is available for use. Amortisation should commence when the asset is available for use.

If control over the future economic benefits from an intangible asset is achieved through legal rights that have been granted for a finite period, the useful life of the intangible asset should not exceed the period of the legal rights unless:

- (a) the legal rights are renewable; and
- (b) renewal is virtually certain.

The amortisation method used should reflect the pattern in which the asset's economic benefits are consumed by the enterprise. If that pattern cannot be determined reliably, the straight-line method should be used. The amortisation charge for each period should be recognized as an expense unless another Accounting Standard permits or requires it to be included in the carrying amount of another asset.

The residual value of an intangible asset should be assumed to be zero unless:

- (a) there is a commitment by a third party to purchase the asset at the end of its useful life; or
- (b) there is an active market for the asset and;
  - (i) residual value can be determined by reference to that market; and
  - (ii) it is probable that such a market will exist at the end of the asset's useful life.

The amortisation period and the amortisation method should be reviewed at least at each financial year end.

The financial statements should disclose the following for each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets:

- (a) The useful lives or the amortisation rates used;
- (b) The amortisation methods used;
- (c) The gross carrying amount and the accumulated amortisation (aggregated with accumulated impairment losses) at the beginning and end of the period;
- (d) A reconciliation of the carrying amount at the beginning and end of the period.

**AS- 27 - Financial Reporting of Interests in Joint Ventures**

A joint venture is a contractual arrangement whereby two or more parties undertake an economic activity, which is subject to joint control.

In respect of its interests in jointly controlled operations, a venturer should recognize in its separate financial statements and consequently in its consolidated financial statements:

- (a) the assets that it controls and the liabilities that it incurs; and
- (b) the expenses that it incurs and its shares of the income that it earns from the joint venture.

This Accounting Standard requires that the venturer should recognize the following in its separate financial statements, and consequently in its consolidated financial statements:

- Its share of the jointly controlled assets giving the details of each class of assets;
- Any liabilities, which it has incurred;
- Its share of any liabilities incurred jointly with the other venturers;
- Any income from the sale or use of its share of the output of the joint venture, together with its share of any expenses incurred by the joint venture; and
- Any expenses which it has incurred in respect of its interest in the joint venture.

If venturer is required to prepare consolidated financial statements, then the interest in a jointly controlled entity should be reported as per proportionate consolidation. Method and procedure of consolidation are similar as prescribed by AS-21 of consolidation of accounts of holding and subsidiary, other requirements of consolidation as mentioned in AS-21 are to be followed.

When a venturer contributes or sells assets to a joint venture, recognition of any portion of a gain or loss from the transaction should reflect the substance of the transaction. While the assets are retained by the joint venture, and provided the venturer has transferred the significant risks and rewards of ownership, the venturer should recognize only that portion of the gain or loss, which is attributable to the interests of the other venturers. The venturer should recognize the full amount of any loss when the contribution or sale provides evidence of a reduction in the net realizable value of current assets or an impairment loss.

When a venturer purchases assets from a joint venture, the venturer should not recognize its share of the profits of the joint venture from the transaction until it resells the assets to an independent party. A venturer should recognize its share of the losses resulting from these transactions in the same way as profits except that losses should be recognized immediately when they represent a reduction in the net realizable value of current assets or an impairment loss.

In case of transactions between a venturer and joint venture in the form of a jointly controlled entity, the above recognition should be applied only in the preparation and presentation of consolidated financial statements and not in the preparation and presentation of separate financial statements of the venturer. Operators or managers of a joint venture should account for any fees in accordance with Accounting Standard (AS) 9, Revenue Recognition

A venturer should disclose the following information in its separate financial statements as well as in consolidated financial statements.

- (i) The aggregate amount of the following contingent liabilities, unless the probability of loss is remote, separately from the amount of other contingent liabilities:
  - (a) any contingent liabilities that the venturer has incurred in relation to its interests in joint ventures and its share in each of the contingent liabilities which have been incurred jointly with other venturers;
  - (b) its share of the contingent liabilities of the joint ventures themselves for which it is contingently liable; and
  - (c) those contingent liabilities that arise because the venturer is contingently liable for the liabilities of the other venturers of a joint venture.
- (ii) The aggregate amount of the following commitments in respect of its interests in joint ventures separately from other commitments:
  - (a) any capital commitments of the venturer in relation to its interests in joint ventures and its share in the capital commitments that have been incurred jointly with other venturers; and
  - (b) its share of the capital commitments of the joint ventures themselves.
- (iii) A list of all joint ventures and description of interests in significant joint ventures.
- (iv) In respect of jointly controlled entities, the proportion of ownership interest, name and country of incorporation or residence.
- (v) The aggregate amounts of each of the assets, liabilities, income and expenses related to its interests in the jointly controlled entities.

#### **AS-28 - Impairment of Assets**

The objective of this Standard is to prescribe the procedures that an enterprise applies to ensure that its assets are carried at no more than their recoverable amount.

In assessing whether there is any indication that an asset may be impaired, an enterprise should consider, as a minimum the following indications:

- (a) External sources of information:
  - (i) during the period, an asset's market value has declined significantly more than would be expected as a result of the passage of time or normal use;

- (ii) significant changes with an adverse effect on the enterprise have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the enterprise operates or in the market to which an asset is dedicated;
  - (iii) market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially;
  - (iv) the carrying amount of the net assets of the reporting enterprise is more than its market capitalisation;
- (b) Internal sources of information:
- (i) evidence is available of obsolescence or physical damage of an asset;
  - (ii) significant changes with an adverse effect on the enterprise have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include plans to discontinue or restructure the operation to which an asset belongs or to dispose of an asset before the previously expected date; and
  - (iii) evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.

In measuring value in use the following facts should be considered:

- (i) cash flow projections should be based on reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the remaining useful life of the asset. Greater weight should be given to external evidence;
- (ii) cash flow projections should be based on the most recent financial budgets/forecasts that have been approved by management. Projections based on these budgets/forecasts should cover a maximum period of five years, unless a longer period can be justified; and
- (iii) cash flow projections beyond the period covered by the most recent budgets/forecasts should be estimated by extrapolating the projections based on the budgets/forecasts using a steady or declining growth rate for subsequent years, unless an increasing rate can be justified. This growth rate should not exceed the long-term average growth rate for the products, industries, or country or countries in which the enterprise operates, or for the market in which the asset is used, unless a higher rate can be justified.

The estimates of future cash flows should include the following:

- (i) projections of cash inflows from the continuing use of the asset;
- (ii) projections of cash outflows that are necessarily incurred to generate the cash inflows from continuing use of the asset (including cash outflows to

prepare the asset for use) and that can be directly attributed, or allocated on a reasonable and consistent basis, to the asset; and

- (iii) net cash flows, if any, to be received (or paid) for the disposal of the asset at the end of its useful life.

In testing a cash-generating unit for impairment, an enterprise should identify whether goodwill that relates to this cash-generating unit is recognised in the financial statements. If this is the case, an enterprise should:

- (a) perform a 'bottom-up' test, that is, the enterprise should:
  - (i) identify whether the carrying amount of goodwill can be allocated on a reasonable and consistent basis to the cash-generating unit under review; and
  - (ii) then, compare the recoverable amount of the cash-generating unit under review to its carrying amount (including the carrying amount of allocated goodwill, if any) and recognise any impairment loss.

The enterprise should perform the step at (ii) above even if none of the carrying amount of goodwill can be allocated on a reasonable and consistent basis to the cash-generating unit under review; and

- (b) if, in performing the 'bottom-up' test, the enterprise could not allocate the carrying amount of goodwill on a reasonable and consistent basis to the cash-generating unit under review, the enterprise should also perform a 'top-down' test, that is, the enterprise should:
  - (i) identify the smallest cash-generating unit that includes the cash-generating unit under review and to which the carrying amount of goodwill can be allocated on a reasonable and consistent basis (the 'larger' cash-generating unit); and
  - (ii) then, compare the recoverable amount of the larger cash-generating unit to its carrying amount (including the carrying amount of allocated goodwill) and recognise any impairment loss.

The increased carrying amount of an asset due to a reversal of an impairment loss should not exceed the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the asset in prior accounting periods.

For each class of assets, the financial statements should disclose the following:

- (i) the amount of impairment losses recognised in the statement of profit and loss during the period and the line item(s) of the statement of profit and loss in which those impairment losses are included;
- (ii) the amount of reversals of impairment losses recognised in the statement of profit and loss during the period and the line item(s) of the statement of profit and loss in which those impairment losses are reversed;

- (iii) the amount of impairment losses recognised directly against revaluation surplus during the period; and
- (iv) the amount of reversals of impairment losses recognised directly in revaluation surplus during the period.

#### **AS-29 - Provisions, Contingent Liabilities and Contingent Assets**

A *provision* is a liability, which can be measured only by using a substantial degree of estimation.

A contingent liability is:

- (a) a possible obligation that arises from past events and the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the enterprise; or
- (b) a present obligation that arises from past events but is not recognised because:
  - (i) it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation; or
  - (ii) a reliable estimate of the amount of the obligation cannot be made.

A *contingent asset* is a possible asset that arises from past events the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the enterprise.

This Standard specifies that a provision should be recognised when:

- (a) an enterprise has a present obligation as a result of a past event;
- (b) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
- (c) a reliable estimate can be made of the amount of the obligation.

If these conditions are not met, no provision should be recognised.

An enterprise should not recognise a contingent liability or contingent asset. The amount recognised as a provision should be the best estimate of the expenditure required to settle the present obligation at the balance sheet date. The amount of a provision should not be discounted to its present value. The risks and uncertainties that inevitably surround many events and circumstances should be taken into account in reaching the best estimate of a provision. Future events that may affect the amount required to settle an obligation should be reflected in the amount of a provision where there is sufficient objective evidence that they will occur.

Where some or all of the expenditure required to settle a provision is expected to be reimbursed by another party, the reimbursement should be recognised when, and only when, it is virtually certain that reimbursement will be received if the enterprise settles the obligation. The reimbursement should be treated as a separate asset. The amount recognised for the reimbursement should not exceed the amount of the

provision. In the statement of profit and loss, the expense relating to a provision may be presented net of the amount recognised for a reimbursement.

Provisions should be reviewed at each balance sheet date and adjusted to reflect the current best estimate. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation, the provision should be reversed. A provision should be used only for expenditures for which the provision was originally recognised.

Provisions should not be recognised for future operating losses.

For each class of provision, an enterprise should disclose the following :

- (a) the carrying amount at the beginning and end of the period;
- (b) additional provisions made in the period, including increases to existing provisions;
- (c) amounts used (i.e. incurred and charged against the provision) during the period; and
- (d) unused amounts reversed during the period.

In addition an enterprise should also disclose the following for each class of provision:

- (a) a brief description of the nature of the obligation and the expected timing of any resulting outflows of economic benefits;
- (b) an indication of the uncertainties about those outflows. Where necessary to provide adequate information, an enterprise should disclose the major assumptions made concerning future events, and
- (c) the amount of any expected reimbursement, stating the amount of any asset that has been recognised for that expected reimbursement.

## **9. INTERNATIONAL ACCOUNTING STANDARDS (IAS)/ INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)**

International Accounting Standards (IAS) are formulated by International Accounting Standard Board (erstwhile International Accounting Standards Committee-IASC). The IASB has issued International Accounting Standards on various matters relating to accounting policies, preparation of financial statements and disclosure in these statements. Out of the International Accounting Standards issued so far, some have been superseded while some have been revised. Since 2001 the International Accounting Standard Board issues the Accounting Standards which is designated as International Financial Reporting Standards (IFRSs).

The following International Accounting Standards (IAS)/International Financial Reporting Standards (IFRS) issued by the IASB which are in force:

- IAS-1 Presentation of Financial Statements
- IAS-2 Inventories

- IAS-7 Cash Flow Statements
- IAS-8 Accounting Policies, Changes in Accounting Estimates and Errors
- IAS-10 Events After the Balance Sheet Date
- IAS-11 Construction Contracts
- IAS-12 Income Taxes
- IAS-14 Segment Reporting
- IAS-16 Property, Plant and Equipment
- IAS-17 Leases
- IAS-18 Revenue
- IAS-19 Employee Benefits
- IAS-20 Accounting for Government Grants and Disclosure of Government Assistance
- IAS-21 The Effects of Changes in Foreign Exchange Rates
- IAS-23 Borrowing Costs
- IAS-24 Related Party Disclosures
- IAS-26 Accounting and Reporting by Retirement Benefit Plans
- IAS-27 Consolidated and Separate Financial Statements
- IAS-28 Investments in Associates
- IAS-29 Financial Reporting in Hyperinflationary Economies
- IAS-31 Interests in Joint Ventures
- IAS-33 Earnings Per Share
- IAS-34 Interim Financial Reporting
- IAS-36 Impairment of Assets
- IAS-37 Provisions, Contingent Liabilities and Contingent Assets
- IAS-38 Intangible Assets
- IAS-39 Financial Instruments: Recognition and Measurement
- IAS-40 Investment Property
- IAS-41 Agriculture
- IFRS-1 First-time Adoption of International Financial Reporting Standards
- IFRS-2 Share-based Payment
- IFRS-3 Business Combinations
- IFRS-4 Insurance Contracts
- IFRS-5 Non-current Assets Held for Sale and Discounted Operations
- IFRS-6 Exploration for and Evaluation of Mineral Resources
- IFRS-7 Financial Instrument: Disclosures
- IFRS-8 Operating Segments
- IFRS- 9 Financial Instruments

A brief description of the above International Accounting Standards and International Financial Reporting Standards is given below:

### **IAS-1 - Presentation of Financial Statements**

The standard prescribes the minimum structure and content, including certain information required on the face of the financial statements. There are four basic financial statements:

- (i) Balance sheet
- (ii) Income statement
- (iii) Cash flow statement
- (iv) Statement showing changes in equity. Various formats are allowed:

The statement shows (a) each item of income and expense, gain or loss, which, as required by other IASC Standards, is recognised directly in equity, and the total of these items, certain foreign currency translation gains and losses and changes in fair values of financial instruments and (b) net profit or loss for the period. Owners' investments and withdrawals of capital and other movements in retained earnings and equity capital are shown in the notes.

### **IAS-2 - Inventories**

Inventories should be valued at the lower of cost and net realisable value. Net realisable value is selling price less cost to complete the inventory and sell it. Cost includes all costs to bring the inventories to their present condition and location. If specific cost is not determinable, the benchmark treatment is to use FIFO or weighted average. An allowed alternative is LIFO, but then there should be disclosure of the lower of (i) net realisable value and (ii) FIFO, weighted average or current cost. The cost of inventory is recognised as an expense in the period in which the related revenue is recognised. If inventory is written down to net realisable value, the write-down is charged to expense. Any reversal of such a write-down in a later period is credited to income by reducing that period's cost of goods sold.

### **IAS-7 - Cash Flow Statements**

The cash flow statement is a required basic financial statement. It explains changes in cash and cash equivalents during a period. Cash equivalents are short-term, highly liquid investments subject to insignificant risk of changes in value. Cash flow statement should classify changes in cash and cash equivalents into operating, investing, and financial activities.

### **IAS-8 - Accounting Policies, Changes in Accounting Estimates and Errors**

An entity shall select and apply its accounting policies consistently for similar transactions, other events and conditions, unless a Standard or an Interpretation specifically requires or permits categorisation of items for which different policies may be appropriate. An entity shall change an accounting policy only if the change (a) is required by a Standard or an Interpretation; or (b) results in the financial statements providing reliable and more relevant information about the effects of transactions, other events or conditions on the entity's financial position, financial performance or cash flows.

**IAS-10 - Events After the Balance Sheet Date**

An entity shall adjust the amounts recognized in its financial statements to reflect adjusting events after the balance sheet date. Further an entity shall not adjust the amounts recognized in its financial statements to reflect non-adjusting events after the balance sheet. If an entity declares dividends to holders of equity instruments after the balance sheet date, the entity shall not recognize those dividends as a liability at the balance sheet date. An entity shall not prepare its financial statements on a going concern basis if management determines after the balance sheet date either that it intends to liquidate the entity or to cease trading, or it has no realistic alternative but to do so.

**IAS-11 - Construction Contracts**

If the total revenue, past and future costs, and the stage of completion of a contract can be measured or estimated reliably, revenues and costs should be recognised by stage of completion (the "percentage-of-completion method"). The expected losses should be recognised immediately. If the outcome cannot be measured reliably, costs should be expensed, and revenues should be recognised to the extent that costs are recoverable ("cost recovery method").

**IAS-12 - Income Taxes**

It provides, among other things:

- (i) Accrue deferred tax liability for nearly all taxable temporary differences.
- (ii) Accrue deferred tax asset for nearly all deductible temporary differences if it is probable a tax benefit will be realised.
- (iii) Accrue unused tax losses and tax credits if it is probable that they will be realised.
- (iv) Use tax rates expected at settlement.
- (v) Current and deferred tax assets and liabilities are measured using the tax rate applicable to undistributed profits.
- (vi) Non-deductible goodwill: no deferred tax.
- (vii) Unremitted earnings of subsidiaries, associates, and joint ventures: Do not accrue tax.
- (viii) Capital gains: Accrue tax at expected rate.
- (ix) Do not "gross up" government grants or other assets or liabilities whose initial recognition differs from initial tax base.

**IAS-14 - Segment Reporting**

*Basis of Segment Reporting:*

- (i) Public companies must report information along product and service lines and along geographical lines.

- (ii) One basis of segmentation is primary, the other is secondary.
- (iii) Segment accounting policies the same as consolidated.

### **IAS-16 - Property, Plant and Equipment**

The cost of an item of property, plant and equipment should be recognised as an asset if, and only if, (a) it is probable that future economic benefits associated with the item will flow to the entity; and (b) the cost of the item can be measured reliably. An item of property, plant and equipment that qualifies for recognition, as an asset should shall be measured at its cost. An entity shall choose either the cost model or the revaluation model as its accounting policy and shall apply that policy to an entire class of property, plant and equipment. If an item of property, plant and equipment is revalued, the entire class of property, plant and equipment to which that asset belongs shall be revalued. If an asset's carrying amount is increased as a result of revaluation, the increase shall be credited directly to equity under the heading of revaluation surplus. If an asset's carrying amount is decreased as a result of revaluation, the decrease shall be recognized in profit or loss. However, the decrease shall be debited directly to equity under the heading revaluation surplus in respect of that asset.

### **IAS-17 - Leases**

A lease is classified as finance lease if it transfers substantially all risks and rewards incidental to ownership. A lease is classified as an operating lease if it does not transfer substantially all the risks and rewards incidental to ownership. At the commencement of the lease term, lessees shall recognize finance leases as assets and liabilities in their balance sheets at amounts equal to the fair value of the leased property or, if lower, the present value of the minimum lease payments, each determined at the inception of the lease. Any initial direct costs of the lessee are added to the amount recognized as an asset. Finance lease gives rise to depreciation expense for depreciable assets as well as finance expense for each accounting period. Lease payments under operating lease shall be recognized as an expense on a straight-line basis over the lease term unless another systematic basis is more representative of the time pattern of the user's benefit.

### **IAS-18 - Revenue**

Revenue should be measured at fair value of consideration received or receivable. Usually this is the inflow of cash. Discounting is needed if the inflow of cash is significantly deferred without interest. If dissimilar goods or services are exchanged (as in barter transactions), revenue is the fair value of the goods or services received or, if this is not reliably measurable, the fair value of the goods or services given up.

Revenue should be recognised when:

- (i) significant risks and rewards of ownership are transferred to the buyer;
- (ii) managerial involvement and control have passed;
- (iii) the amount of revenue can be measured reliably;
- (iv) it is probable that economic benefits will flow to the enterprise; and
- (v) the costs of the transaction (including future costs) can be measured reliably.

**IAS-19 - Employee Benefits***Post-employment Benefits including Pensions*

*Defined Contribution Plans:* Contribution of a period should be recognised as expenses.

*Defined Benefits Plans:* Current service cost should be recognised as an expense.

*Other Employee Benefits:* Including vacations, holidays, accumulating sick pay, retiree medical and life insurance, etc.

**IAS-20 - Accounting for Government Grants and Disclosure of Government Assistance**

Grants should not be credited directly to equity. They should be recognised as income in a way matched with the related costs. Grants related to assets should be deducted from the cost or treated as deferred income.

**IAS-21 - The Effects of Changes in Foreign Exchange Rates**

A foreign currency transaction shall be recorded, on initial recognition in the functional currency, by applying to the foreign currency amount the spot exchange rate between the functional currency and the foreign currency at the date of the transaction. Reporting at subsequent balance sheet date should be: (a) foreign currency monetary items shall be translated using the closing rate; (b) non-monetary items that are measured in terms of historical cost in a foreign currency shall be translated using the exchange rate at the date of the transaction; and (c) non-monetary items that are measured at fair value in a foreign currency shall be translated using the exchange rates at the date when the fair value was determined. Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous financial statements shall be recognized in profit and loss in the period in which they arise. When a gain or loss on a non-monetary item is recognized directly in equity, any exchange component of that gain or loss shall be recognized directly in equity. Conversely, when a gain or loss on a monetary item is recognized in profit or loss, any exchange component of that gain or loss shall be recognized in profit or loss.

**IAS-23 - Borrowing Costs**

The benchmark treatment is to treat borrowing costs as expenses. The allowed alternative is to capitalise those directly attributable to construction. If capitalised and funds are specifically borrowed, the borrowing costs should be calculated after any investment income on temporary investment of the borrowings. If funds are borrowed generally, then a capitalisation rate should be used based on the weighted average of borrowing costs for general borrowings outstanding during the period. Borrowing costs capitalised should not exceed those actually incurred. Capitalisation begins when expenditures and borrowing costs are being incurred and construction of the asset is in progress. Capitalisation suspends if construction is suspended for an extended period, and ends when substantially all activities are complete.

**IAS-24 - Related Party Disclosures**

This standard requires disclosure of related party transactions and outstanding balances in the separate financial statements of a parent, venturer or investor. A party is related to an entity if: (a) directly or indirectly through one or more intermediaries, the party: (i) controls, is controlled by, or is under common control with, the entity which includes parents, subsidiaries and fellow subsidiaries: (ii) has an interest in the entity that gives it significant influence over the entity; or (iii) has joint control over the entity; (b) the party is an associate; (c) the party is a joint venture in which the entity is a venturer; (d) the party is a member of the key management personnel; (e) the party is close member of the family; (f) the party is controlled, jointly controlled or significantly influenced; (g) the party is a post – employment benefit plan for the benefit of employees of the entity.

**IAS-26 - Accounting and Reporting by Retirement Benefit Plans**

The standard applies to accounting and reporting by retirement benefit plans. It establishes separate standards for reporting by defined benefit plans and by defined contribution plans.

**IAS-27 - Consolidated and Separate Financial Statements**

Consolidated financial statements are the financial statements of a group presented as those of a single economic activity. Consolidated financial statements shall include all subsidiaries of the parent. Intra-group balances, transactions, income and expenses shall be eliminated in full. The financial statements of the parent and its subsidiaries used in the preparation of the consolidated financial statements shall be prepared as on the same reporting date. When the reporting dates are different, the subsidiary prepares additional financial statements as on the same date. Consolidated financial statements shall be prepared using uniform accounting policies for like transactions. Minority interests shall be presented in the consolidated balance sheet within equity, separately from the parent shareholders' equity.

**IAS-28 - Investments in Associates**

An associate is an entity, including an unincorporated entity such as partnership, over which the investor has significant influence and that is neither a subsidiary nor an interest in a joint venture. An investment in an associate shall be accounted for using the equity method with specified exceptions. An investor shall discontinue the use of equity method from the date that it ceases to have significant influence over an associate. The investor in applying equity method uses the most recent available financial statements of the associate. When the reporting dates of the investor and the associate are different, the associates prepares, for the use of the investor, financial statements as of the same date as the financial statements of the investor. The investor's financial statements shall be prepared using uniform accounting policies for like transactions and events in similar circumstances.

**IAS-29 - Financial Reporting in Hyperinflationary Economies**

Hyperinflation is indicated if cumulative inflation over three years is 100 per cent or more (among other factors). In such a circumstance, financial statements should be presented in a measuring unit that is current at the balance sheet date.

Comparative amounts for prior periods are also restated into the measuring unit at the current balance sheet date. Any gain or loss on the net monetary position arising from the restatement of amounts into the measuring unit current at the balance sheet date should be included in net income and separately disclosed.

### **IAS-31 - Interests in Joint Ventures**

A joint venture is a contractual arrangement whereby two or more parties undertake an economic activity that is subject to joint control. These are of three types:

- (i) *Jointly controlled operations*: It should be recognised by the venturer by including the assets and liabilities that it controls and the expenses that it incurs and its share of the income that it earns from the sale of goods or services by the venture.
- (ii) *Jointly controlled assets*: It should be recognised as follows:
  - (a) its share of the jointly controlled assets, classified according to the nature of the assets;
  - (b) any liability that it has incurred;
  - (c) its share of any liabilities incurred jointly with the other venturers in relation to the joint venture;
  - (d) any income from the sale or use of its share of output of the joint venture;
  - (e) any expenses that it incurred in respect of its interest in the joint venture.
- (iii) *Jointly controlled entities*: It may maintain its own accounting records and prepares and presents financial statements in the same way as other entities in conformity with International Financial Reporting Standard.

### **IAS-33 - Earnings Per Share**

It is applicable only to public companies. An entity shall calculate basic earnings per share for profit or loss attributable to ordinary equity holders. Basic earnings per share shall be calculated by dividing profit or loss attributable to ordinary equity holders by the weighted average number of ordinary shares. An entity shall calculate diluted earnings per share amounts for profit or loss attributable to ordinary equity holders of the parent entity and, if presented, profit or loss from continuing operations attributable to those equity holders. For the purpose of calculating diluted earnings per share, an entity shall adjust profit or loss attributable to ordinary equity holders of the parent equity, and the weighted average number of shares outstanding, for the effects of all dilutive potential ordinary shares. Potential ordinary shares shall be treated as dilutive when, and only when, their conversion to ordinary shares would decrease earnings per share or increase loss per share from continuing operations.

An entity shall present on the face of the income statement basic and diluted earnings per share profit or loss from continuing operations attributable to the ordinary equity holders of the parent entity and for profit or loss attributable to the ordinary equity holders of the parent entity for the period for each class of ordinary shares that has a different right to share in profit for the period.

**IAS-34 - Interim Financial Reporting**

The standard defines the minimum content of an interim financial report as a condensed balance sheet, condensed income statement, condensed cash flow statement, condensed statement showing changes in equity, and selected explanatory notes.

Interim financial statements, complete or condensed, must cover the following periods:

- (i) a balance sheet at the end of the current interim period, and comparative as of the end of the most recent full financial year;
- (ii) income statements for the current interim period and cumulative for the current financial year to date, with comparative statements for the comparable interim periods of the immediately preceding financial year;
- (iii) a statement of changes in equity cumulatively for the current financial year to date and comparative for the same year-to-date period of the prior year; and
- (iv) a cash flow statement cumulatively for the current financial year to date and comparative for the same year-to-date period of the prior financial year.

Enterprises are required to apply the same accounting policies in their interim financial reports as in their latest annual financial statements

**IAS-36 - Impairment of Assets**

Impairment of assets, deals mainly with accounting for impairment of goodwill, intangible assets and property, plant and equipment. The standard includes requirements for identifying an impaired asset, measuring its recoverable amount, recognising or reversing any resulting impairment loss, and disclosing information on impairment losses or reversals of impairment losses. An impairment loss should be recognised whenever the recoverable amount of an asset is less than its carrying amount.

**IAS-37 - Provisions, Contingent Liabilities and Contingent Assets**

The standard set out three specific applications of these general requirements:

- (a) a provision should not be recognised for future operating losses;
- (b) a provision should be recognised for an onerous
- (c) a provision for restructuring costs should be recognised only when an enterprise has a detailed formal plan for the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement that plan or announcing its main features to those affected by it.

**IAS-38 - Intangible Assets**

The standard states that:

- (i) an intangible asset should be recognised, in the financial statements, if, and

only if:

- (a) it is probable that the expected future economic benefits that are attributable to the asset will flow to the enterprise; and
  - (b) the cost of the asset can be measured reliably.
- (ii) An entity shall assess the probability of expected future economic benefits using reasonable and supportive assumptions that represent management's best estimate of the set of economic conditions that will exist over the useful life of the asset.
  - (iii) Internally generated goodwill shall not be recognized as an asset.
  - (iv) No intangible asset arising from research shall be recognized.
  - (v) An intangible asset arising from development shall be recognized subject to specified conditions.
  - (vi) Expenditure on an intangible item that was initially recognized as an expense shall not be recognized as part of the cost of an intangible asset at a latter date.
  - (vii) The accounting for an intangible asset is based on its useful life.
  - (viii) An intangible asset shall be derecognised on disposal or when no future economic benefits are expected from its use or disposal.

#### **IAS-39 - Financial Instruments: Recognition and Measurement**

Under this standard an entity shall recognize a financial asset or financial liability on the balance sheet when and only when, the entity becomes a party to the contractual provisions of the instrument. An entity shall derecognise a financial asset when, the contractual rights to the cash flows from the financial asset expire or it transfers the financial asset. On derecognition of a financial asset in its entirety, the difference between the carrying amount and the sum of (a) the consideration received and (b) any cumulative gain or loss that had been recognized directly in equity shall be recognized in profit or loss.

When a financial asset or liability is recognized initially, an entity shall measure it at its fair value plus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial assets or financial liability. After initial recognition, an entity shall measure all financial liabilities at amortised cost using the effective interest method.

#### **IAS-40 - Investment Property**

Investment property shall be recognized as an asset when it is probable that the future economic benefits that are associated with the investment property will flow to the entity, and the cost of investment property can be measured reliably. An investment property shall be measured initially at its cost. Transaction cost shall also be included in the initial measurement.

For accounting purpose an enterprise must choose either:

- (i) *a fair value model*: Investment property should be measured at fair value and changes in fair value should be recognised in the income statement; or
- (ii) *a cost model*: Investment property should be measured at depreciated cost (less any accumulated impairment losses).

An investment property shall be derecognised on disposal or when the investment property is permanently withdrawn from use and no future economic benefits are expected from its disposal.

### **IAS-41 - Agriculture**

This standard prescribes the accounting treatment, financial statement presentation and disclosures related to agricultural activity. Biological assets should be measured at their fair value less estimated point-of-sale costs, except where fair value cannot be measured reliably. Agricultural produce harvested from an enterprise's biological assets should be measured at its fair value less estimated point-of-sale costs at the point of harvest. If an active market exists for a biological asset or agricultural produce, the quoted price in that market is the appropriate basis for determining the fair value of that asset. If an active market does not exist, an enterprise uses market-determined prices or values when available. A gain or loss arising on initial recognition of biological assets and from the change in fair value less estimated point-of-sale costs of biological assets should be included in net profit or loss for the period in which it arises. If a government grant related to a biological asset measured at its fair value less estimated point-of-sale costs is conditional, including where a government grant requires an enterprise not to engage in specified agricultural activity, an enterprise should recognise the government grant as income when the conditions attaching to the government grant are met.

### **IFRS-1 - First-time Adoption of International Financial Reporting Standards**

The objective of this IFRS is to ensure that an entity's first IFRS financial statement and its financial reports for part of the period covered by those financial statements, contain high quality information that: (a) is transparent for users and comparable over all periods presented; (b) provides a suitable starting point for accounting under International Financial Reporting Standards; and (c) can be generated at a cost that does not exceed the benefits to users.

An entity shall use the accounting policies in its opening IFRS balance sheet and throughout all periods presented in its first IFRS financial statements. An entity's estimates under IFRS at the date of transition to IFRS shall be consistent with estimates made for the same date under previous GAPP, unless there is objective evidence that those estimates were in error. An entity shall explain how the transition from previous GAPP to IFRSs affected its reported financial position, financial performance and cash flows.

### **IFRS-2 - Share-based Payment**

Entities often grant shares or share option to employees or other parties. An entity shall recognize the goods or services received or acquired in a share-based

payment transaction when it obtains the goods or as the services are rendered. The entity shall recognize a corresponding increase in equity if the goods or services were received in an equity-settled share-based payment transaction, or a liability if the goods or services were acquired in cash settled share based payment transaction. When the goods or services received or acquired in a share-based payment transaction do not qualify for recognition as assets, they shall be recognized as expenses. For equity settled share based payment transactions, the entity shall measure the goods or services received, and the corresponding increase in equity directly, at the fair value of the goods or services received, unless that fair value cannot be estimated reliably. For cash-settled share-based payment transactions, the entity shall measure the goods or services acquired and the liability incurred at the fair value of the liability. For share-based payment transactions in which the terms of the arrangement provide either the entity or the counterparty with the choice of whether the entity settles the transaction in cash (or other assets) or by issuing equity instruments, the entity shall account for that transaction, or the components of that transaction, as a cash-settled share-based payment transaction if, and to the extent that, the entity has incurred a liability to settle in cash or other assets, or as an equity-settled share-based payment transaction if, and to the extent that, no such liability has been incurred.

### **IFRS-3 - Business Combinations**

The objective of this IFRS is to specify the financial reporting by an entity when it undertakes a business combination. The acquirer is the combining entity that obtains control of the other combining entities or businesses. The acquirer shall measure the cost of a business combination as the aggregate of:

(a) the fair values, at the date of exchange, of assets given, liabilities incurred or assumed, and equity instruments issued by the acquirer, in exchange for control of the acquiree; plus; (b) any costs directly attributable to the business combination.

The acquirer shall at the acquisition date: (a) recognize goodwill acquired in a business combination as an asset; and (b) initially measure that goodwill at its cost, being the excess of the cost of the business combination over the acquirer's interest in the net fair value of the identifiable assets, liabilities and contingent liabilities.

### **IFRS-4 – Insurance Contracts**

The objective of this IFRS is to specify the financial reporting for insurance contracts by any entity that issues such contracts until the Board completes the second phase of its project on insurance contracts.

An insurer shall assess at each reporting date whether its recognized insurance liabilities are adequate, using current estimates of future cash flows under its insurance contracts. If that assessment shows that the carrying amount of its insurance liabilities is inadequate in the light of the estimated future cash flows, the entire deficiency shall be recognized in profit or loss. An insurer shall disclose information that identifies and explains the amounts in its financial statements arising from insurance contracts. An insurer shall disclose information that helps users to understand the amount, timing and uncertainty of future cash flows from insurance contracts.

**IFRS-5 – Non-current Assets held for Sale and Discontinued Operations**

The objective of this IFRS is to specify the accounting for assets held for sale, and the presentation and disclosure of discontinued operations. An entity shall classify a non-current asset (or disposal group) as held for sale if its carrying amount will be recovered principally through a sale transaction rather than through continuing use. An entity shall measure a non-current asset (or disposal group) classified as held for sale at the lower of its carrying amount and fair value less costs to sell. An entity shall present and disclose information that enables users of the financial statements to evaluate the financial effects of discontinued operations and disposals of non-current assets (or disposal groups).

**IFRS-6 – Exploration for and Evaluation and Mineral resources**

The object of this IFRS is to specify the financial reporting for the exploration for and evaluation of mineral resources. Exploration and evaluation assets shall be assessed for impairment when facts and circumstances suggest that the carrying amount of an exploration and evaluation asset may exceed its recoverable amount. An entity shall determine an accounting policy for allocating exploration and evaluation assets to cash-generating units or groups of cash-generating units for the purpose of assessing such assets for impairment. An entity shall disclose information that identifies and explains the amounts recognized in its financial statements arising from the exploration for and evaluation of mineral resources.

**IFRS-7 - Financial Instruments: Disclosures**

IFRS 7 deals with the disclosure requirements in relation to all risks arising from financial instruments (with limited exemptions), and applies to any entity that holds financial instruments. The level of disclosure required depends on the extent of the entity's use of financial instruments and its exposure to financial risk.

**IFRS-8 - Operating Segments**

IFRS 8 applies to the separate or individual financial statements of an entity whose debt or equity instruments are traded in a public market; or that files, or is in the process of filing, its (consolidated) financial statements with a securities commission or other regulatory organisation for the purpose of issuing any class of instruments in a public market.

IFRS 8 requires an entity to report financial and descriptive information about its reportable segments. An entity shall disclose information to enable users of its financial statements to evaluate the nature and financial effects of the business activities in which it engages and the economic environments in which it operates.

**IFRS-9 – Financial Instruments**

An entity shall recognize a financial asset in its statement of financial position when and only when, the entity becomes party to the contractual provisions of the instrument. A financial asset shall be measured at amortised cost when the asset is held with in a business model whose objective is to hold assets in order to collect contractual cash flows and the contractual terms of the financial asset give rise to specified dates to cash flows that are solely payments of principal and interest on the

principal amount outstanding. A Financial asset shall be measured at fair value unless it is measured at amortised cost.

### **CONVERGENCE OF INDIAN ACCOUNTING STANDARDS WITH INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)**

International Financial Reporting Standards are now becoming universal reporting language. In tune with the global trend the Government of India decided to facilitate the convergence of the Indian Accounting Standards with IFRS by 1<sup>st</sup> April 2011. In this direction all the existing Indian Accounting Standards are being revised and converged with corresponding to International Accounting Standards/ International Financial Reporting Standards. These converged Accounting Standards shall be known as Ind AS. As a result of this there shall be two separate sets of Accounting Standards under Section 211(3C) of the Companies Act, 1956. The first set would comprise the Indian Accounting Standards, which are converged with the IFRS and shall be applicable to the specified class of companies in a phased manner. The specified classes of companies would be – Road Map I - Phase I - (i) NSE-Nifty 50 and BSE-Sensex 30 companies ; (ii) Companies listed in overseas stock exchanges; (iii) Companies with net worth above ₹ 1000 crore: Phase II: Companies whether listed or not having a net worth exceeding ₹ 500 crore but not above ₹ 1000 crore; Phase III :- Listed companies having a net worth of ₹ 500 crore or less; Road Map II- Phase I: All insurance companies; Phase II: (a) NSE-Nifty 50 or BSE- Sensex 30 NBFCs. and NBFCs, listed or not, having a net worth above Rs 1000 crore; (b) Scheduled commercial banks and urban co-operative banks with net worth net worth above ₹ 300 crore ; Phase III: Urban co-operative banks having a net worth in excess of ₹ 200 crore but not exceeding 300 crore

The second set would comprise the existing Indian Accounting Standards and would be applicable to other companies, including Small and Medium Companies (SMC).

The Ministry of Corporate Affairs has notified convergence of 35 Indian Accounting Standards with International Financial Reporting Standards (henceforth called IND AS) on February 25, 2011. The following are the IND AS notified corresponding International Accounting Standards(IAS)/ International Financial Reporting Standards (IFRS):

IND AS	Converged Standards	Corresponding IAS/IFRS
IND AS 1	Presentation of Financial Statements	IAS 1
IND AS 2	Inventories	IAS 2
IND AS 7	Statement of Cash Flows	IAS 7
IND AS 8	Accounting Policies, Changes in Accounting Estimates and Errors	IAS 8
IND AS 10	Events after the Reporting Period	IAS 10
IND AS 11	Construction Contracts	IAS 11
IND AS 12	Income Taxes	IAS 12

IND AS 16	Property, Plant and Equipment	IAS 16
IND AS 17	Leases	IAS 17
IND AS 18	Revenue	IAS 18
IND AS 19	Employee Benefits	IAS 19
IND AS 20	Accounting for Government Grants and Disclosure of Government Assistance	IAS 20
IND AS 21	The Effects of Changes in Foreign Exchange Rates	IAS 21
IND AS 23	Borrowing Costs	IAS 23
IND AS 24	Related Party Disclosures	IAS 24
IND AS 27	Consolidated and Separate Financial Statements	IAS 27
IND AS 28	Investment in Associates	IAS 28
IND AS 29	Financial Reporting in Hyper Inflationary Economics	IAS 29
IND AS 31	Interest in Joint Ventures	IAS 31
IND AS 32	Financial Instruments: Presentation	IAS 32
IND AS 33	Earnings per Share	IAS 33
IND AS 34	Interim Financial Reporting	IAS 34
IND AS 36	Impairment of Assets	IAS 36
IND AS 37	Provisions and Contingent Liabilities and Contingent Assets	IAS 37
IND AS 38	Intangible Assets	IAS 38
IND AS 39	Financial Instruments: Recognition and Measurements	IAS 39
IND AS 40	Investment Property	IAS 40
IND AS 101	First Time Adoption of Financial Reporting Standards	IFRS 1
IND AS 102	Share-based Payment	IFRS 2
IND AS 103	Business Combinations	IFRS 3
IND AS 104	Insurance Contracts	IFRS 4
IND AS 105	Non Current Assets Held for Sale and Discontinued Operations	IFRS 5
IND AS 106	Exploration for and Evaluation of Mineral Resources	IFRS 6
IND AS 107	Financial Instruments: Disclosures	IFRS 7
IND AS 108	Operating Segments	IFRS 8

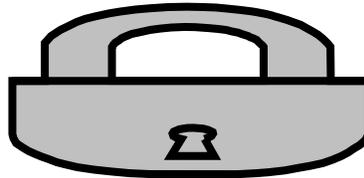
The date of implementation of these IND AS is yet to be notified.

**LESSON ROUND UP**

- Indian Accounting Standards (AS) are prescribed by the Accounting Standard Board (ASB) of the Institute of Chartered Accountants of India which are notified by the Central Government in consultation with the National Advisory Committee on Accounting Standards.
- International Accounting Standards (IAS)/International Financial Reporting Standards (IFRS) are issued by International Accounting Standard Board (IASB).
- Accounting standards relate to the codification of generally accepted accounting principles and are stated to be the norms of accounting policies and practices.
- The objective of setting standards is to bring about uniformity in financial reporting and to ensure consistency and comparability in the data published by enterprises.
- Accounting standards facilitate uniform preparation and reporting of general purpose financial statements published annually for the benefit of shareholders, creditors, employees and the public at large.
- The preparation of financial statements with adequate disclosures, as required by the accounting standards is the responsibility of the management of the organization.
- The main function of the ASB is to formulate Accounting Standards so that such standards may be established by the ICAI in India.
- The Accounting Standards are formulated under the authority of the Council of the ICAI.
- The Central Government has issued the Companies (Accounting Standards) Rules 2006. Under this Rules, Accounting Standards (i.e. 1 to 7 and 9 to 29) have been notified.
- The Government of India decided to facilitate the convergence of the Indian Accounting Standards with IFRS by 1<sup>st</sup> April 2011.
- In this direction all the existing Indian Accounting Standards are being revised and converged with corresponding to International Accounting Standards/International Financial Reporting Standards. These converged Accounting Standards shall be known as Ind AS.
- The Ministry of Corporate Affairs has notified convergence of 35 Indian Accounting Standards with International Financial Reporting Standards (henceforth called IND AS) on February 25, 2011. These are - IND ASs 1, 2, 7, 8, 10, 11, 12, 16, 17, 18, 19, 20, 21, 23, 24, 27, 28, 29, 31, 32, 33, 34, 36, 37, 38, 39, 40, 101, 102, 103, 104, 105, 106, 107 and 108. These Accounting Standards are yet to be in force.

- As a result of this there shall be two separate sets of Accounting Standards under Section 211(3C) of the Companies Act, 1956. The first set would comprise the Indian Accounting Standards, which are converged with the IFRS and shall be applicable to the specified class of companies in a phased manner.
- The second set would comprise the existing Indian Accounting Standards and would be applicable to other companies, including Small and Medium Companies (SMC).

### SELF TEST QUESTIONS

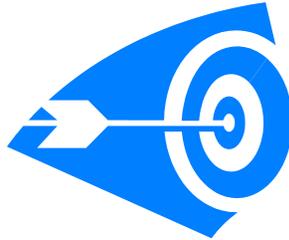


1. What do you mean by accounting standards?
2. What is the significance of accounting standards?
3. "Accounting standards can be seen as providing an important mechanism to help in the resolution of potential financial conflicts of interest between the various important groups in society". Comment.
4. Briefly explain the functioning of the Accounting Standards Board in India.
5. Explain the scope of Accounting Standards issued by ICAI.
6. Mention the procedure for issuing accounting standards by the ICAI.
7. Mention the various accounting standards issued under the Companies (Accounting Standards) Rules 2006.
8. Mention the various International Accounting Standards/International Financial Reporting Standards formulated by International Accounting Standard Board.
9. Discuss the approach for convergence of Indian Accounting Standards with IFRS.

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STUDY II  
**ACCOUNTING FOR SHARE CAPITAL**

**LEARNING OBJECTIVES**



After studying this Study Lesson you will be able to:

- Understand the share capital structure in the balance sheet of a company.
- Discuss the methods and accounting procedure of issue of shares.
- Specify the accounting treatment when shares are issued at par, premium and at discount.
- Explain the meaning and accounting treatment of forfeiture of shares and reissue thereof.
- Understand the accounting procedure of buy-back of shares.
- Enumerate the steps for redemption of preference shares.
- Appreciate the purpose of issuing right shares.

### **1. SHARES AND SHARE CAPITAL**

According to Section 2(46) of the Companies Act, 'share' means share in the share capital of a company and includes stock except where a distinction between stock and share is expressed or implied. A share is one unit into which the total share capital is divided. It is a fractional part of the share and forms the basis of ownership in the company and the people who contribute the money through shares, which constitute the share capital of the company. Thus for example, when a company has a share capital of ₹ 5,00,000 divided into 50,000 shares of ₹ 10 each and a person who has taken 50 shares of that company is said to have a share in the share capital of the company to the tune of ₹ 500. In other words, shares are divisions of the share capital of a company. There are two basic types of share capital based on the types of shares which can be issued by a company under the Companies Act, 1956 i.e. (a) preference shares and (b) equity shares.

### **2. PREFERENCE SHARES**

Preference shares are those which carry the following preferential rights as to:

- (i) the payment of dividend at a fixed rate; and
- (ii) the return of capital on winding up of the company.

Both the rights must exist to make a share preference, the rights are conferred by the Articles of Association. Preference shareholders can enforce their rights of getting dividend in priority over the equity shareholders only if there are profits and the directors decide to distribute them by way of dividend. Unless the Articles otherwise provide preference shares will be cumulative, i.e., they will be entitled to receive arrears of their dividend.

Preference shareholders do not have any voting right except when dividend is outstanding for more than two years in case of Cumulative Preference Shares, and for more than three years in the case of Non-cumulative Preference Shares. But they have the right to vote on any resolution for winding up of the company or for the reduction or repayment of share capital.

If the Articles of the company so provide, the preference shareholders may also be given the following rights in addition to the preferential rights mentioned above:

- (i) To participate in the surplus profits remaining after the equity shareholders have received dividend at a fixed rate. (Participating Preference Shares).
- (ii) To receive arrears of dividend at the time of winding up; if the Articles are silent, preference shareholders will be entitled to receive the arrears.
- (iii) To receive premium on redemption of Preference Shares.
- (iv) To participate in the surplus remaining after the equity shares are redeemed in winding up.

### **3. EQUITY SHARES**

An equity share is one which is not a preference share. These are normally risk bearing shares. Equity shareholders will get dividend and repayment of capital after meeting the claims of preference shareholders. In other words, if the shareholder is not entitled to dividend at a fixed rate in preference to others or if there is no preferential right for the capital to be repaid, the share capital will be treated as equity share capital. After payment of dividend at a fixed rate on preference shares, if profit is left, it can be distributed as dividend among the equity shareholders. During liquidation of the company, equity shareholders are paid out but are usually entitled to all the surplus assets after the payment of creditors and preference shareholders. The value of these shares in the market fluctuates with the fortunes of the company.

Equity shareholders have the right to vote on any resolution placed before the company. The voting right to every shareholder will be proportionate to his share of the paid up equity capital. The right to claim dividend will arise only when the dividend is declared by the company in the general meeting. The usual practice is for the board of directors to recommend dividend and the annual general meeting to declare the same.

### **4. SHARE CAPITAL IN COMPANY'S BALANCE SHEET**

The prescribed form of the Balance Sheet of a company given in Schedule VI of the Companies Act, 1956 requires the description of Share Capital under the following categories:

1. *Nominal or Authorised Capital*: It refers to that amount which is stated in the Memorandum of Association as the share capital of the company. The company is

registered with this amount of capital. This is the maximum limit of capital which the company is authorised to issue and beyond which the company cannot issue shares unless the capital clause in the Memorandum is altered.

2. *Issued Capital*: It refers to that part of the authorised capital of the company which has actually been offered to the public for subscription in cash including shares allotted to vendors/promoters for consideration other than cash. It sets the limit of the capital available for subscription. The prescribed form of the Balance Sheet requires that under the head "Issued Capital", should be stated (i) the different classes of share capital as also the sub-classes of the preference shares, (ii) the date and terms of redemption or conversion (if any) of any redeemable preference capital, and (iii) any option on unissued share capital.

3. *Subscribed Capital*: It refers to that part of the issued capital which has actually been subscribed by the public and subsequently allotted to them by the directors of the company which are fully paid or partially paid.

4. *Called up Capital*: It is that portion of the subscribed capital which the shareholders are called upon to pay on the shares applied by them. A company does not necessarily require the full amount at once, on the shares subscribed and hence calls up only such portion as it needs. The balance then remaining is known as uncalled capital.

5. *Paid-up Capital*: It refers to that part of the called up capital which has actually been paid by the shareholders. This is the actual capital of the company which is included in the total of the Balance Sheet. Paid-up capital identifies with the called up capital if all the shareholders have paid the amount called up by the company.

## 5. ISSUE OF SHARES FOR CASH

Shares of a company may be issued in any of the following three ways:

- (i) At par;
- (ii) At premium; and
- (iii) At discount.

## 6. ISSUE OF SHARES AT PAR

Shares are said to be issued at par when the issue price is equal to the face value or nominal value of the shares i.e. issue price is ₹ 10 and face value is also ₹ 10. When the shares are issued at par, the company may ask the payment of the face value of the shares either payable in one lump sum or in instalments.

(a) *When shares are issued at par and are payable in full in a lump sum.*

(1) *On receipt of application money -*

Bank	Dr.	With the amount received
To Share Application and Allotment A/c		on applications

Usually, transactions involving cash are recorded directly in the Cash Book and in such a case no journal entry is required. The entry in the Cash Book will be as follows:

**Cash Book (Bank Columns)**

<i>Dr.</i>	<i>Cr.</i>
<i>Particulars</i>	<i>Particulars</i>
To Share Application and Allotment A/c (Application money on..... shares @ ₹..... per share)	₹

**Note:** Unless shares are allotted by the company, the receipt of application is simply an offer and cannot be credited to Share Capital A/c

(2) On allotment of shares -

Share Application and Allotment A/c	Dr.	With the money received on the number of shares allotted.
To Share Capital A/c		

**Note:** If the company fails to raise the minimum subscription then no shares can be allotted and the application money has to be returned to the applicants. For this the entry will be as follows:

Share Application and Allotment A/c	Dr.	With the application money received now refunded.
To Bank		

The entry in the cash book will be as follows:

**Cash Book (Bank Columns)**

<i>Dr.</i>	<i>Cr.</i>
<i>Particulars</i>	<i>Particulars</i>
	By Share Application and Allotment A/c (Refund of application money on..... shares @ ₹..... per share)

**Illustration 1**

A Ltd. issued 10,000 equity shares of ₹ 10 each payable in full on application. The company received application for 10,000 shares. Applications were accepted in full. Show the entries in the books of the company.

**Solution:****Cash Book (Bank Columns)**

Dr.		Cr.
<i>Particulars</i>	₹	<i>Particulars</i>
To Equity Share Application and Allotment A/c (Application money on 10,000 equity shares @ ₹ 10 per share)	1,00,000	By Balance c/d
	1,00,000	1,00,000

**Journal**

<i>Particulars</i>	<i>Dr. (Rs)</i>	<i>Cr. (Rs)</i>
Equity Share Application and Allotment A/c To Equity Share Capital A/c (Allotment of 10,000 Equity Shares of ₹ 10 each vide Board's resolution dated.....)	1,00,000	1,00,000

**(b) When shares are issued at par and are payable in instalments:**

In such a case, the various instalments are termed as follows: First instalment is called 'application money'. Second instalment is called 'allotment money'. Third instalment is called 'first call money' and the last instalment is called 'final call money'.

**(i) On receipt of application money**

On receipt of application money the following journal entry is passed:

Bank	Dr.	with the amount received
To Share Application Account		on application
(Being the application money received in respect of..... shares @ ₹..... per share)		

When the capital of the company consists of shares of different classes, a separate share application account will be opened for each class of shares, i.e. equity share application account/preference share application account etc.

**(ii) On allotment of shares**

When the shares are allotted, the application money on the number of shares allotted (as distinct from the number applied for) is transferred to share capital account by passing the following journal entry:

Share Application Account To Share Capital Account (Being the application money on allotted shares now transferred to share capital account)	Dr.	with the amount of application money on allotted shares
--	-----	---

Generally additional sum of money is payable by members on allotment. The entry is:

Share Allotment Account To Share Capital Account (Being the allotment money due in respect of allotment of..... shares @ ₹..... each)	Dr.	with the amount due on allotment
---	-----	----------------------------------

When the allotment money is received the following journal entry is made:

Bank To Share Allotment A/c (Being the amount received on..... shares @ ₹..... each)	Dr.	with the actual amount received as allotment money
--	-----	--

On refund of application money on rejected applications.

Share Application A/c To Bank	Dr.	with the amount actually repaid
----------------------------------	-----	---------------------------------

*(iii) On calls on shareholders:*

After allotment, whenever the need arises, the directors may demand further money from the shareholders towards payment of the value of shares taken up by them. Such demands are termed as calls. The different calls are distinguished from each other by their serial numbers, i.e. first call, second call, third call and so on. The last instalment is also termed the final call along with the number of the last call. The journal entries are as follows:

*When first call is made:*

Share First Call Account To Share Capital A/c (Being the amount due on first call @ ₹..... per share on..... shares)	Dr.	with the amount due on first call
--	-----	-----------------------------------

The amount due on a particular call is to be calculated with reference to the number of shares on which the call is made and the amount of instalment for that call.

*On receipt of first call money:*

Bank	Dr.	with the amount received
To Share First Call Account		on first call
(Being the amount received in respect of first call @ ₹..... per share on..... shares)		

*When second call is made:*

Share Second Call Account	Dr.	with the amount due on
To Share Capital Account		second call
(Being the amount due on second call @ ₹..... per share on.... shares)		

*On receipt of second call money:*

Bank	Dr.	With the amount actually
To Share Second Call Account		received on second call
(Being the amount received in respect of second call @ ₹..... per share on..... shares)		

*When the final call is made:*

Share Final Call Account	Dr.	with the amount due on
To Share Capital Account		final call
(Being the amount due on final call @ ₹..... per share on..... shares)		

*On receipt of final call money:*

Bank	Dr.	with the amount actually
To Share Final Call Account		received on final call
(Being the amount received in respect of final call @ ₹..... per share on..... shares)		

**Note:** In actual practice the cash transactions have not been journalised but the same have to be entered in the cash book.

### Illustration 2

P Ltd. was registered with an authorised capital of ₹ 10,00,000 divided into 1,00,000 equity shares of ₹ 10 each out of which 50,000 equity shares were offered to the public for subscription. The shares were payable as under:

- ₹ 3 per share on application
- ₹ 2 per share on allotment

₹ 2 per share on 1st call

₹ 3 per share on 2nd and final call

The shares were fully subscribed for and the money was duly received.

Show the journal and cash book entries.

**Solution:**

**Journal Entries**

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Equity Share Application A/c To Share Capital A/c (Being the application money on 50,000 equity shares transferred to equity share capital account as per Boards resolution dated.....)	Dr. 1,50,000	1,50,000
Equity Share Allotment A/c To Equity Share Capital A/c (Being allotment money due on 50,000 equity shares @ ₹ 2 per share as per Board's resolution dated.....)	Dr. 1,00,000	1,00,000
Equity Share First Call A/c To Equity Share Capital A/c (Being the first call money on 50,000 equity shares @ ₹ 2 per share due as per Board's resolution dated.....)	Dr. 1,00,000	1,00,000
Equity Share Second & Final Call A/c To Equity Share Capital A/c (Being the second and final call money due on 50,000 Equity Shares @ 3 per share as per Board's resolution dated.....)	Dr. 1,50,000	1,50,000

**Cash Book (Bank Column)**

<i>Dr.</i>		<i>Cr.</i>
<i>Particulars</i>	<i>₹</i>	<i>₹</i>
To Equity Share Application A/c (Application money on 50,000 equity share @ ₹ 3 per share)	1,50,000	By Balance c/d 5,00,000
To Equity Share Allotment A/c (Allotment money on 50,000 equity shares @ ₹ 2 per share)	1,00,000	

To Equity Share First Call A/c	1,00,000	
(First Call money on 50,000 equity shares @ ₹ 2 per share)		
To Equity Share Second & Final Call A/c	1,50,000	
(Second and Final Call money on 50,000 equity shares @ ₹ 3 per share)		
	<u>5,00,000</u>	<u>5,00,000</u>

### 7. APPLICATION SUPPLEMENTED BY BLOCKED ACCOUNT (ASBA)

In order to make the existing public issue process more efficient, Securities and Exchange Board of India (SEBI) has introduced a supplementary process of applying in public issues, i.e. the Application Supported by Blocked Amount (ASBA) process. ASBA is an application for subscribing to an issue, containing an authorization to block the application money in a bank account. The ASBA process is available in all public issues made through book building route. It shall co-exist with the current process when cheque is used as a mode of payment. A Self Certified Syndicate Bank (SCSB) which offers the facility of applying through the ASBA process. An ASBA investor submits an Application Supported by Blocked Amount physically or electronically through the internet banking facility to the SCSB with whom the bank account to be blocked, is maintained. The SCSB then blocks the application money in the bank account specified in the ASBA, on the basis of an authorization to this effect given by the account holder. The application money remains blocked in the bank account till finalization on the basis of allotment in the issue or till withdrawal/failure of the issue or withdrawal/rejection of the application as the case may be. Once the basis of allotment is finalized, the Registrar to the issue sends an appropriate request to the SCSB for unblocking the relevant bank accounts and for transferring the requisite amount to the issuer's account.

### 8. UNDER-SUBSCRIPTION OF SHARES

In actual practice, it rarely happens that the number of shares applied for is exactly equal to the number of shares offered to public for subscription. If the number of shares applied for is less than the number of shares issued the shares are said to be undersubscribed. When an issue is under subscribed, entries are made on the basis of number of shares applied for, provided the minimum subscription is raised and the company proceeds to allot the shares.

### 9. OVER-SUBSCRIPTION OF SHARES

When the number of shares applied for exceeds the number of shares issued, the shares are said to be over-subscribed. In such situation, the directors allot shares on some reasonable basis because the company can allot only that number which is actually offered for subscription. Moreover, in view of the guidelines issued by SEBI, regarding the basis of allotment on oversubscription, it is not possible to reject out

rightly any application for shares unless it suffers some infirmity such as incomplete information or absence of signature(s) or insufficient application money and so on. In short, the following procedure is adopted:

- (i) Total rejection of some applications;
- (ii) Acceptance of some applications in full; and
- (iii) Allotment to the remaining applicants on pro-rata basis.

Whatever criterion is adopted for allotment, it must be ensured that shares are issued in tradeable lot. In case of pro-rata allotment, no application for shares is refused and no applicant is allotted the shares in full. Each applicant receives the shares in some proportion.

In the event of refusal or rejection of applications, the application money received in connection with such applications will be refunded to the applicants with a letter of regret. The following journal entry is passed:

Share Application A/c To Bank	Dr.	with the amount actually refunded
(Being the refund of application money on..... shares @ ₹..... per share)		

Partial allotment is done by allotting a smaller number of shares than the number applied for. This may be done on proportionate or pro-rata basis also. In such cases, the excess amount of application money (i.e. overpaid amount) is not refunded but retained and treated as a payment towards allotment money. The following journal entry is made to transfer excess application money to allotment account.

Share Application A/c To Share Allotment A/c	Dr.	with the excess application money
(Being the surplus application money transferred to share allotment account)		

Surplus money exceeding that due on allotment should be refunded to the allottees. However, the company may transfer this to Calls-in-Advance Account if:

- (i) Acceptance of calls in advance is permitted by the Company's Articles.
- (ii) The consent of the applicant has been taken either by a separate letter or by inserting a clause in the company's prospectus.

The journal entry will be as follows:

Share Application A/c To Calls-in-Advance A/c	Dr.	with the excess application money left over the amount due on application and allotment
(Being the surplus application money transferred to Calls-in-Advance Account)		

The company can retain the calls in advance at the most so much amount as is sufficient make the allotted shares fully paid up ultimately.

### 10. CALLS-IN-ADVANCE

If authorised by the articles, a company may receive from a shareholder the amount remaining unpaid on shares, even though the amount has not been called up. This is known as calls-in-advance. It is a debt of a company until the calls are made and the amount already paid is adjusted. Calls-in-advance may also arise when the number of shares allotted to a person is much smaller than the number applied for and the terms of issue permit the company to retain the amount received in excess of application and allotment money. Of course, the company can retain only so much as is required to make the allotted shares fully paid ultimately. When calls are made, the calls-in-advance account is ultimately closed by transfer to the relevant call accounts. It is noted that the money received on calls-in-advance does not become part of share capital. It is shown under a separate heading, namely 'calls-in-advance' on the liabilities side. No dividend is paid on calls-in-advance. The following is the accounting treatment:

*(i) On receipt of call money in advance:*

Bank	Dr.	with the amount of call
To Call-in-Advance A/c		money received in advance
(Being the calls received in advance)		

*(ii) As and when calls are made:*

Calls-in-Advance A/c	Dr.	with the amount adjusted on
To Relevant Call A/c		relevant call becoming due

### 11. INTEREST ON CALLS-IN-ADVANCE

The amount received as calls-in-advance is a debt of the company, the company is liable to pay interest on the amount of Calls-in-Advance from the date of receipt of the amount till the date when the call is due for payment. Generally the Articles of the company specify the rate at which interest is payable. If the articles do not contain such rate, Table A will be applicable which leaves the matter to the Board of directors subject to a maximum rate of 6% p.a.

It is to be noted that the interest payable on Calls-in- Advance is definitely a charge against the profits of the company. As such, Interest on Calls-in-Advance must be paid even when no profit is earned by the company. The following is the accounting treatment:

*(i) If Interest on Calls-in-Advance is paid in cash -*

Interest on Calls-in-Advance A/c	Dr.	with the amount of
To Bank		interest paid

This entry will be shown in the Cash Book as follows:

**Cash Book (Bank Column)**

Dr.		Cr.
Particulars	₹	Particulars
		₹
		By Interest on Calls-in-Advance A/c (Interest on Calls-in-Advance paid @ .....% p.a. on ₹..... for..... months)

(ii) If interest on Calls-in-Advance is not paid in cash -

Interest on Calls-in-Advance A/c To Sundry Shareholders A/c	Dr.	with the amount of interest payable
--	-----	--

**Note:** In such a case, the liability to sundry shareholders is to be treated as outstanding liability and as such, it should be shown under the head "Current Liabilities" in the balance sheet.

(iii) At the end of the year, when interest on Calls-in-Advance is transferred to Profit and Loss A/c -

Profit and Loss A/c To Interest on Calls-in-Advance A/c	Dr.	with the amount of interest
--	-----	-----------------------------

**Illustration 3**

Nu Look Ltd. issued, 1,00,000 Equity Shares of ₹ 10 each payable as follows:

On Application (On 1st March, 2011)	₹ 4
On Allotment (On 1st April, 2011)	₹ 1
On First Call (On 1st August, 2011)	₹ 3
On Final Call (On 1st October, 2011)	₹ 2

Application were received for 2,60,000 shares. Of these 10,000 shares were in disorder; 40,000 shares in lots of 100 shares; 1,20,000 shares in lots of exceeding 100 but less than 500 shares; 60,000 shares in lots of exceeding 500 but less than 1,000 shares and the balance in lots of exceeding 1,000 shares.

Allotment was made as follows:

Application for the 10,000 shares in disorder were rejected.

Application for 100 shares in full, i.e. 100%	40,000
Application over 100 shares but not exceeding 500 shares - 40%	48,000
Application over 500 shares but not exceeding 1,000 shares - 15%	9,000
Applications over 1,000 shares - 10%	3,000

Money received in excess on shares partially allotted were retained to the extent possible. Show the cash book and journal entries assuming that all the instalments were duly received and interest was paid by the directors on calls-in-advance @ 6% per annum on 1st October, 2011.

**Solution:****Cash Book (Bank Column)**

Dr.				Cr.	
Date	Particulars	₹	Date	Particulars	₹
1.3.2011	To Equity Share Application A/c (application money @ ₹ 4 per share)	10,40,000	1.4.2011	By Equity Share Application A/c (refund of application money)	2,80,000
1.4.2011	To Equity share Allotment A/c (balance of allotment money)	40,000	1.10.2011	By Interest on Call in Advance A/c (interest @ 6% on ₹ 1,80,000 for 4 months = 3,600 and on ₹ 1,20,000 for 6 months - ₹ 3,600)	7,200
1.8.2011	To Equity Share 1st Call A/c (balance of share 1st call money)	1,20,000	1.10.2011	By Balance c/d	9,92,800
1.10.2011	To Equity Share Final A/c	<u>80,000</u>			
		<u>12,80,000</u>			<u>12,80,000</u>

**Journal Entries**

Date	Particulars	Dr. (₹)	Cr. (₹)
1.4.2011	Equity Share Application A/c To Equity Share Capital A/c (Being the application money on 1,00,000 shares transferred to share capital account)	Dr. 4,00,000	4,00,000
1.4.2011	Equity Share Allotment A/c To Equity Share Capital A/c (Being the allotment money due in respect of 1,00,000 equity shares @ Re. 1 per share)	Dr. 1,00,000	1,00,000
1.4.2011	Share Application A/c To Share Allotment A/c To Calls in Advance A/c (Being the transfer of surplus)	Dr. 3,60,000	60,000 3,00,000

	application money received on 60,000 shares)		
1.8.2011	Equity Share 1st Call A/c To Equity Share Capital A/c (Being the 1st call money due on 1,00,000 equity shares @ ₹ 3 per share)	Dr.	3,00,000  3,00,000
1.8.2011	Calls in Advance A/c To Equity Share 1st Call A/c (Being the amount transferred from calls in advance account)	Dr.	1,80,000  1,80,000
1.10.2011	Equity Share Final Call A/c To Equity Share Capital A/c (Being the final call money due on 1,00,000 equity share @ ₹ 2 per share)	Dr.	2,00,000  2,00,000
1.10.2011	Calls-in-Advance A/c To Equity Share Final Call A/c  (Being the amount transferred from calls-in-advance account)	Dr.	1,20,000  1,20,000

### Working Note

#### Statement showing the adjustment of Application Money and Calls in Advance Money

Shares applied	Shares allotted	Amount received on appli- cations	Amount due on appli- cations	Balance of appli- cation money	Amount due on allotment	Amount received on allotment	Surplus to be trans- ferred to calls-in- advance
1	2	3	4	5	6	7	8
		₹	₹	₹	₹	₹	₹
10,000	Nil	40,000	Nil	Nil	Nil	Nil	Nil
40,000	40,000	1,60,000	1,60,000	Nil	40,000	40,000	Nil
1,20,000	48,000	4,80,000	1,92,000	2,88,000	48,000	Nil	2,40,000
60,000	9,000	2,40,000	36,000	2,04,000	9,000	Nil	45,000
30,000	3,000	1,20,000	12,000	1,08,000	3,000	Nil	15,000
2,60,000	1,00,000	10,40,000	4,00,000	6,00,000	1,00,000	40,000	3,00,000

<i>Amount to be refunded</i>	<i>Amount due to 1<sup>st</sup> call</i>	<i>Calls-in-Advance to be adjusted against 1<sup>st</sup> call</i>	<i>Amount payable on 1<sup>st</sup> call</i>	<i>Surplus remaining in calls in advance</i>	<i>Amount due on final call</i>	<i>Calls-in-advance to be adjusted against final call</i>	<i>Amount payable on final call</i>
9	10	11	12	13	14	15	16
₹	₹	₹	₹	₹	₹	₹	₹
40,000	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nil	1,20,000	Nil	1,20,000	Nil	80,000	Nil	80,000
Nil	1,44,000	1,44,000	Nil	96,000	96,000	96,000	Nil
1,50,000	27,000	27,000	Nil	18,000	18,000	18,000	Nil
90,000	9,000	9,000	Nil	6,000	6,000	6,000	Nil
2,80,000	3,00,000	1,80,000	1,20,000	1,20,000	2,00,000	1,20,000	80,000

## 12. CALLS IN ARREAR AND INTEREST ON CALLS IN ARREAR

When calls are made upon shares allotted, the shareholders holding the shares are bound to pay the call money within the date fixed for such payment. If a shareholder makes a default in sending the call money within the appointed date, the amount thus failed is called Calls-in-Arrear.

The interest on Calls-in-Arrear is recoverable according to the provisions in this regard in Articles of the company. But if the Articles are silent, Table 'A' shall be applicable which prescribes that if a sum called in respect of shares is not paid before or on the day appointed for payment, the person who failed to pay shall pay thereof from the day appointed for payment to the time of actual payment at a rate not exceeding 5% per annum. However, the directors have the right to waive the payment of interest on Calls-in-Arrear. The interest on Calls-on-Arrear Account is transferred to the Profit and Loss Account at the end of the year.

### Accounting Entries

(i) When call money is in arrear:

Calls-in-Arrear A/c	Dr.	with the amount-failed by the shareholders
To Relevant Call A/c		

(ii) On receipt of amount of Calls-in-Arrear with interest, on a subsequent date:

Bank	Dr.	with the amount received
To Calls-in-Arrears A/c		

### Illustration 4

On 1st January, 2011, New Ventures Ltd. issued 1,00,000 equity shares of ₹10 each payable as follows:

On application	₹ 3
On allotment	₹ 2
On 1st Call	₹ 2 (Payable after 2 months, from the date of allotment)

On Final Call ₹ 3 (Payable after 2 months from the date of 1st call)

Applications were received on 15th January, 2011 for 1,20,000 shares and allotment was made on 1st February, 2011. Applicants for 50,000 shares were allotted in full, those for 60,000 shares were allotted 50,000 shares and applications for 10,000 shares were rejected.

Balance of amount due on allotment was received on 15th February.

The calls were duly made on 1st March, 2011 and 1st April, 2011 respectively. One shareholder did not pay the 1st Call money on 3,000 shares which he paid with the final call together with interest at 5% p.a. Another shareholder holding 2,000 share did not pay the final call money till end of the accounting year which ends on 30th June. Show the Cash Book and Journal Entries.

**Solution:**

**Journal Entries**

<i>Date</i>	<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
1.2.2011	Equity Share Application A/c To Equity Share Capital A/c	Dr.	3,00,000	3,00,000
	(Being the transfer of application money on 1,00,000 shares @ ₹ 3 per share transferred to share capital account)			
1.2.2011	Equity Share Allotment A/c To Equity Share Capital A/c	Dr.	2,00,000	2,00,000
	(Being the amount due on allotment of 10,00,000 shares @ Re. 1 per share)			
1.2.2011	Equity Share Application A/c To Share Allotment A/c	Dr.	30,000	30,000
	(Being the transfer of excess application money)			
1.3.2011	Equity Share 1st Call A/c To Equity Share Capital A/c	Dr.	2,00,000	2,00,000
	(Being the 1st call amount due on 1,00,000 shares @ ₹ 2 per share)			
1.4.2011	Calls-in-Arrear A/c To Equity Share 1st Call A/c	Dr.	6,000	6,000
	(Being the transfer of 1st call money on 3,000 equity shares @ ₹ 2 per share)			

1.4.2011	Equity Share Final Call A/c To Equity Share Capital A/c (Being the final call amount due on 1,00,000 shares @ ₹ 3 per share)	Dr.	3,00,000	3,00,000
1.5.2011	Calls-in-Arrear A/c To Equity Share Final Call A/c (Being the transfer of final call money on 2,000 equity shares @ ₹3 per share)	Dr.	6,000	6,000
30.6.2011	Sundry Shareholders A/c To Interest on Calls-in-Arrears A/c (Being the interest due on ₹ 6,000 @5% for two months)	Dr.	50	50

**Cash Book (Bank Column)**

<i>Dr.</i>		<i>Cr.</i>
<i>Date</i>	<i>Particulars</i>	<i>₹</i>
<i>Date</i>	<i>Particulars</i>	<i>₹</i>
15.1.2011	To Equity Share Application A/c (application money @ ₹ 3 per share 2,20,000 shares)	3,60,000
15.2.2011	To Equity Share Allotment A/c (balance of allotment money on ₹ 1,00,000 shares)	1,70,000
1.4.2011	To Equity Share 1st Call A/c (1st call money on 97,000 shares)	1,94,000
1.5.2011	To Equity Share Final A/c (final call money on 98,000 shares)	2,94,000
1.5.2011	To Calls-in-Arrear A/c (arrears of 1st call money @ ₹ 2 per share on 3,000 shares)	6,000
1.5.2011	To Interest on Calls-in-Arrear A/c (interest on ₹ 6,000 for one month @ 5% p.a.)	25
		10,24,025
		10,24,025

**Working Note**

Shares applied for	Shares allotted	Money received on application	Money due on application	Balance of application money	Amount due on allotment	Balance of allotment money payable
1	2	3	4	5	6	7
		₹	₹	₹	₹	₹
50,000	50,000	1,50,000	1,50,000	Nil	1,00,000	1,00,000
60,000	50,000	1,80,000	1,50,000	30,000	1,00,000	70,000
10,000	Nil	30,000	Nil	30,000	Nil	Nil
1,20,000	1,00,000	3,60,000	3,00,000	60,000	2,00,000	1,70,000

Application money refunded	Amount due on 1st call	Amount not paid on 1st call	Amount received on 1st call	Amount due on final call	Amount not paid on final call	Amount received on final call
8	9	10	11	12	13	14
₹	₹	₹	₹	₹	₹	₹
Nil						
Nil						
30,000						
30,000	2,00,000	6,000	1,94,000	3,00,000	6,000	2,94,000 + 6,000 (towards 1 <sup>st</sup> call)

**13. ISSUE OF SHARES AT PREMIUM**

When shares are issued at a price higher than the face value, they are said to be issued at a premium. Thus, the excess of issue price over the face value is the amount of premium. For example, if a share of ₹ 10 is issued at ₹ 12, ₹ (12 – 10) = ₹ 2 is the premium.

The shares of many successful companies which offer attractive rates of dividend on their existing capitals, fetch a higher price than their face value in the market. The magnitude of the premium depends on the intensity of demand for such shares and the existing money market conditions.

The premium on issue of shares must not be treated as revenue profits. On the contrary, it must be regarded as capital receipt. The Companies Act requires that when a company issues shares at a premium whether for cash or otherwise, a sum equal to the aggregate amount of the premium collected on shares must be credited to a separate account called "Securities Premium Account". There are no restrictions in the Companies Act on the issue of shares at a premium, but there are restrictions on its disposal. Under Section 78 of the Act, the Securities Premium Account may be used wholly or in part for:

- (i) issuing fully paid bonus shares to the members;
- (ii) writing off preliminary expenses of the company;
- (iii) writing off the expenses of or the commission paid or discount allowed on any issue of shares or debentures of the company; or

- (iv) providing for the premium payable on the redemption of any redeemable preference shares or of any debentures of the company.

In addition, according to Section 77A, a company may purchase (or buy back) its own shares or other specified securities out of the Securities Premium Account.

It is to be noted here that any utilization of the amount of premium except in any of the modes specified above, can only be done by way of reduction of capital and this will require the compliance of the provisions laid down in Section 100 of the Act.

Of course Securities Premium Account must be shown separately in the liabilities side of the balance sheet under the head "Reserves & Surplus" so long as it is not used in the above manner.

The premium is usually payable with the instalment due on allotment. In such a case, the amount of premium included in the allotment money should be segregated and credited direct to the Securities Premium Account.

**Note:** Some companies charge premium with share application money but in some instances, premium is charged partly with share application money and partly at the time of allotment of shares.

*Accounting Entry:*

When shares are allotted and allotment money becomes due:

Share Allotment A/c	Dr.	(with the money due on allotment including premium)
To Securities Premium A/c		(with the premium amount)
To Share Capital A/c		(with the share money)

**Illustration 5**

Wonder Ltd. issued 10,000, 12% Preference Shares of ₹ 100 each at a premium of ₹ 10 per share payable as follows:

On Application	₹ 30
On Allotment	₹ 30 (including premium)
On First Call	₹ 25
On Final Call	₹ 25

The application were received for 12,000 shares and the directors allotted 10,000 shares and rejected 2,000 shares with the money received thereon refunded.

The allotment money was duly received while the first call money was received on 9,000 shares and the final call money on 8,000 shares.

Show the cash book and journal entries and prepare the balance sheet of the company.

**Solution:****Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr.( ₹)</i>
12% Preference Share Application and Allotment A/c	Dr.	6,00,000	
To 9% Preference Share Capital A/c			5,00,000
To Securities Premium A/c			1,00,000
(Capitalisation of application money @ ₹ 30 per share and allotment money due @ ₹ 30 per share on 10,000, 12% preference shares including ₹ 10 as premium as per Board's resolution dated.....)			
12% Preference Share First Call A/c	Dr.	2,50,000	
To 12% Preference Share Capital A/c			2,50,000
(First call money due @ ₹ 25 per share on 10,000, 12% Preference Shares as per Board's resolution dated.....)			
Calls-in-Arrear A/c	Dr.	25,000	
To 12% Preference Share First Call A/c			25,000
(First call money due on 1,000, 12% Pref. Shares @ ₹ 25 per share transferred to Call-in-Arrear A/c)			
12% Preference Share Final Call A/c	Dr.	2,50,000	
To 12% Preference Share Capital A/c			2,50,000
(Final call money due @ ₹ 25 per share on 10,000, 12% Pref. shares as per Board's resolution dated...)			
Calls-in-Arrear A/c	Dr.	50,000	
To 12% Preference Share Final Call A/c			50,000
(Final call money due on 2,000, 12% Pref. Shares @ ₹ 25 per share transferred to Calls-in-Arrear A/c)			

**Cash Book (Book Column)**

<i>Dr.</i>		<i>Cr.</i>	
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	
		<i>₹</i>	
To 12% Preference Share Application and Allotment A/c (Application money on 12,000, 12% Pref. Shares @ ₹ 30 per share)	3,60,000	By 12% Preference Share Application A/c (Refund of Application money of 2,000 applications @ ₹ 30 per share)	60,000
To 12% Preference Share Application and Allotment A/c (Allotment money @ ₹ 30 per share on 10,000, 12% preferences shares)	3,00,000	By Balance c/d	10,25,000
To 12% Preference Share First Call A/c (First call money @ ₹ 25 per share on 9,000, 12% Pref. Shares)	2,25,000		
To 12% Preference Share Final Call A/c (Final call money @ ₹ 25 per share on 8,000, 12% Pref. Shares)	2,00,000		
	10,85,000		10,85,000

**Balance Sheet of Wonder Ltd. as at.....**

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
<i>Share Capital</i>		<i>Current Assets</i>	
Authorised Capital		- Loans & Advances	
Issued, Subscribed and Paid-up Capital - 10,000, 12% Preference Shares of ₹ 100 each fully called up	10,00,000	<i>A. Current Assets</i>	
Less: Call-in-Arrears	75,000	Cash at Bank	10,25,000
	9,25,000		
<i>Reserves &amp; Surplus:</i>			
Securities Premium Account	1,00,000		
	10,25,000		10,25,000

#### 14. ISSUE OF SHARES AT DISCOUNT

When shares are issued at a price lower than the face value, they are said to be issued at discount. Thus, the excess of the face value over the issue price is the amount of discount. For example, if a share of ₹ 10 is issued at ₹ 9 then ₹ (10 – 9) = Re. 1 is the discount. Section 79 of the Companies Act allows a company to issue shares at a discount subject to the following conditions:

- (i) The shares must belong to a class already issued.
- (ii) The issue is authorised by a resolution passed in the general meeting of the company and the sanction of the Central Government is obtained.
- (iii) The resolution must specify the maximum rate of discount at which the shares are to be issued. No resolution shall be sanctioned by the Central Government if the maximum rate of discount specified in the resolution exceeds ten per cent, unless it is of opinion that a higher percentage of discount may be allowed in special circumstances of the case.
- (iv) Not less than one year has at the date of the issue elapsed since the date on which the company was entitled to commence business.
- (v) The shares must be issued within two months from the date of receiving the sanctions of the Central Government or within such extended time as the Central Government may allow.

It follows from the above conditions that shares cannot be issued at a discount if:

- (i) it is a new company; or
- (ii) it is a new class of shares even though of an old company.

If a company has issued shares at a discount, every subsequent prospectus relating to the issue of shares must contain particulars of a discount allowed on the issue of the shares or of so much of that discount as has not been written off at the date of the issue of the prospectus.

The discount on issue of shares must be treated as a loss of capital nature and as such debited to a separate account called „Discount on Issue of Shares Account’. Until it is written off, it must be distinctly shown on the assets side of the Balance Sheet under the head “Miscellaneous Expenditure”. Though there is no legal obligation on the part of the company to write off such discount, a sound business policy demands that since it is not represented by value, it should be written off gradually out of profits over a reasonable number of years.

In the absence of any instructions to the contrary, discount on the issue of shares is generally recorded at the time of allotment. Whenever shares are issued at a discount, Share Allotment Account is debited only with the net amount due and the discount allowed is debited to „Discount on Issue of Shares Account”, the total being credited to Share Capital Account to make up the nominal amount of shares subscribed. Thus, the accounting entry will be as follows:

- |   |     |                             |
|---|-----|-----------------------------|
| 1. Share Allotment A/c                          | Dr. | with the amount due         |
| Discount on Issue of Shares A/c                 | Dr. | with the discount allowed   |
| To Share Capital A/c                            |     | with the total amount       |
| 2. When some portion of discount is written off |     |                             |
| Profit and Loss A/c                             | Dr. | with the amount written off |
| To Discount of Issue of Shares A/c              |     |                             |

**Illustration 6**

Elegant Ltd. issued at 25,000 equity shares of ₹ 10 each at a discount of 10% payable as follows:

On Application	₹ 3.00 per share
On Allotment	₹ 1.00 per share
On First Call	₹ 2.50 per share
On Final Call	₹ 2.50 per share

Applications were received for 30,000 shares and the directors allotted 25,000 shares and refunded the excess application money for 5,000 shares.

The allotment money was duly received on all the shares. One shareholder holding 1,000 shares did not pay the first call money while another shareholder holding 200 shares paid the final call money along with the first call money. The company did not make the final call.

Show the Cash Book, Journal entries and prepare the Balance Sheet of the Company.

**Solution:****Cash Book (Bank Column)**

<i>Dr.</i>		<i>Cr.</i>
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>
		<i>₹</i>
To Equity Share Application A/c 90,000 (Application money on 30,000 shares @ ₹ 3 per share)		By Equity Share Application A/c 15,000 (Refund of application money on 5,000 shares @ ₹ 3 per share)
To Equity Share Allotment A/c 25,000 (Allotment money on 25,000 shares @ Re. 1 per share)		By Balance c/d 1,60,000
To Equity Share First Call A/c 60,000 (First Call money on 24,000 shares @ ₹ 2.50 per share)		
To Calls-in-Advance A/c 500		
	<u>1,75,500</u>	<u>1,75,500</u>

## Journal Entries

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Equity Share Application A/c	Dr.	75,000	
Equity Share Allotment A/c	Dr.	25,000	
Discount on Issue of Shares A/c	Dr.	25,000	
To Equity Share Capital A/c			1,25,000
<p>(Capitalisation of application money @ ₹ 3 per share and allotment money due @ ₹ 1 per share excluding discount @ ₹ 1 per share on allotment of 25,000 equity shares of ₹ 10 each at a discount of 10% as per Board's resolution dated.....)</p>			
Equity share First Call A/c	Dr.	62,500	
To Equity Share Capital A/c			62,500
<p>(First call due on 25,000 shares ₹ 2.50 per share as per Board's resolution dated...)</p>			
Calls-in-Arrear A/c	Dr.	2,500	
To Equity Share First Call A/c			2,500
<p>(First call due on 1,000 shares ₹ 2.50 per share transferred to Calls-in-Arrear A/c)</p>			

## Balance Sheet of Elegant Ltd. as at.....

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
	₹		₹
<i>Share Capital</i>		<i>Current Assets,</i>	
Authorised Capital	—	Loans and Advances	
Issued & Subscribed Capital -		A. Current Assets	
25,000 Equity Shares of		Cash at Bank	1,60,500
₹ 10 each	2,50,000	Miscellaneous Expenditure	
Paid-up Capital -		Discount on Issue of Shares	25,000
25,000 Equity Shares of			
₹ 10 each ₹ 7.50			
per share called up	1,87,500		
Less: Calls-in-Arrear	2,500		
Calls-in-Advance	500		
	1,85,500		1,85,500

### 15. ISSUE OF SHARES FOR CONSIDERATION OTHER THAN CASH

A company may also issue shares for consideration other than cash to vendors who sell some assets to the company or to the promoters for their services. When shares are so issued, the Companies Act requires that the same must be clearly stated in the balance sheet and must be distinguished from the issue made for cash.

### 16. ISSUE OF SHARES TO VENDORS

A company may purchase assets from the vendors and instead of paying the vendors cash, may settle the purchase price by issuing fully paid shares of the company. This type of issue of shares to the vendors is called issue of shares for consideration other than cash. Such shares may be issued by the vendors either (i) at par, or (ii) at a premium, or (iii) at a discount. The accounting entries in such a case will be as follows:

(i) *When assets are acquired from the vendors -*

Sundry Assets A/c (individually)	Dr.	with the purchase price payable for the assets acquired
To Vendors		

(ii) *When fully paid shares are issued to vendors at par -*

Vendors	Dr.	with the nominal value of the shares allotted
To Share Capital A/c		

(iii) *When fully paid shares are issued to vendors at a premium -*

Vendors	Dr.	with the purchase price with the nominal value of the shares allotted
To Share Capital A/c		
To Securities Premium A/c		with the amount of premium

(iv) *When fully paid shares are issued to vendors at a discount -*

Vendors	Dr.	with the purchase price
Discount on Issue of Shares A/c	Dr.	with the discount allowed
To Share Capital A/c		with the total

### Illustration 7

Rocket Ltd. purchased the business of Comet Ltd. for ₹ 2,70,000 payable in fully paid shares. Rocket Ltd. allotted equity shares of ₹ 10 each fully paid in satisfaction of the claim by Comet Ltd. Show the necessary journal entries in the books of Rocket Ltd. assuming that:

- Such shares are issued at par,
- Such shares are issued at premium of 20% and
- Such shares are issued at a discount of 10%.

**Solution:****Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
	Sundry Assets To Comet Ltd. (Purchase of assets from Comet Ltd. as per agreement dated.....)	Dr. 2,70,000	2,70,000
(a).	If shares are issued at par Comet Ltd. To Equity Share Capital A/c (Allotment of 27,000 equity shares of ₹ 10 each to vendors as fully paid-up for consideration other than cash as per Board's resolution dated...)	Dr. 2,70,000	2,70,000
(b)	If shares are issued at a premium of 20% Comet Ltd. To Equity Share Capital A/c To Securities Premium A/c (Allotment of 22,500 equity shares of ₹ 10 each at a premium of ₹ 2 per share to vendors as fully paid-up for consideration other than cash as per Board's resolution dated.....)	Dr. 2,70,000	2,25,000 45,000
(c)	If shares are issued at a discount of 10% Comet Ltd. Discount on Issue of Shares A/c To Equity Share Capital A/c (Allotment of 30,000 equity shares of ₹ 10 each at a discount of Re. 1 per share to vendor as fully paid-up for consideration other than cash as per Board's resolution dated.....)	Dr. 2,70,000 Dr. 30,000	3,00,000

**Working Notes:**

1. When shares are issued at a premium of 20%

$$\text{Issue price per share} = ₹ \left( 10 + \frac{20}{100} \times 10 \right) = ₹ 12$$

$$\therefore \text{No. of shares to be allotted} = \frac{₹2,70,000}{₹12} = ₹ 22,500$$

2. When shares are issued at a discount of 10%

$$\text{Issue price per share} = ₹ \left( 10 - \frac{10}{100} \times 10 \right) = ₹ 9$$

$$\therefore \text{No. of shares to be allotted} = \frac{₹2,70,000}{₹9} = ₹ 30,000$$

### 17. ISSUE OF SHARES TO PROMOTERS

A company may allot fully paid shares to promoters or any other party for the services rendered by them by way of furnishing technical information, engineering services, plant layout, drawing and designing, etc. without payment. This type of issue of shares to promoters is called issue of shares for consideration other than cash. As the amount paid to promoters for services rendered by them is supposed to be utilised by the company over a long period of time, such expenditure should be treated as capital expenditure and debited to Goodwill Account. The accounting entry in such a case will be as follows:

Goodwill A/c To Share Capital A/c	Dr.      with the nominal value of the shares allotted.
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#### Illustration 8

Bright Ltd. was registered with a share capital of ₹ 10,00,000 in equity shares of ₹ 10 each. The company acquired factory building worth ₹ 1,00,000 and plant and machinery worth ₹ 80,000 from Delite Ltd. and issued 18,000 equity shares of ₹ 10 each to the vendors as fully paid-up. The directors also decided to allot 2,000 equity shares credited as full paid to the promoters for their services. Further capital was issued to the public for cash to the extent of ₹ 3,00,000 payable in full with the application. All the shares were taken up by the public and fully paid for. Show the necessary journal entries and the balance sheet.

#### Solution:

#### Journal Entries

Particulars		Dr. (₹)	Cr. (₹)
Factory Building A/c	Dr.	1,00,000	
Plant and Machinery A/c	Dr.	80,000	
To Delite Ltd.			1,80,000
(Purchase of assets from Delite Ltd. as per agreement dated.....)			
Delite Ltd.	Dr.	1,80,000	
To Equity Share Capital A/c			1,80,000
(Allotment of 18,000 equity shares of ₹ 10 each to vendors as fully paid-up for consideration other than cash as per Board's resolutions dated.....)			



shares. They have to give notice to the defaulting shareholder calling upon him to pay the amount due from him together with interest before a specified date (not being earlier than the expiry of fourteen days from the date of service of the notice). This notice must state that if the shareholder fails to pay the amount along with interest that may be due within the specified date, the shares will be forfeited. If the payment is not received by the time, the directors meet to consider the forfeiture and they can proceed to forfeit the shares. The directors must pass a resolution for forfeiting the shares at a duly constituted meeting of the Board of directors and the defaulting shareholder should be informed about the forfeiture of his shares.

The effect of forfeiture of shares is that the defaulting shareholder loses all his rights in the shares and ceases to be a member. The name of the shareholder is removed from the Register of Members and the amount already paid by him is forfeited.

He is not entitled in future to dividends and the rights of membership. However, the directors have the right to cancel such forfeiture before the forfeited shares are re-issued. It is interesting to note here that although a person ceases to be a member on the forfeiture of his shares, he still continues to be liable for the unpaid calls due on the date of forfeiture until the nominal value of the shares is fully paid-up (u/s 426 dealing with the liability of present and past members as contributories in the event of winding up).

Forfeited shares account is to be shown in the balance sheet by way of addition to the paid-up share capital on the 'liabilities' side, until the concerned shares are reissued.

### **Accounting Entries on Forfeitures of Shares**

Since a company can issue shares either (a) at par or (b) at a premium, or (c) at a discount, accounting treatment on forfeiture will, also differ in the above cases. As such, accounting entries are shown below under each of the above cases.

#### **(a) Forfeiture of Shares Issued at Par**

(i) Where the unpaid calls have already been transferred to Calls-in-Arrear A/c and the respective call accounts have been closed:

Share Capital A/c	Dr.	with the amount of called up value of shares forfeited i.e. [no. of shares forfeited x the called up value per share.]
To Shares Forfeited A/c		with the amount already paid-up by the shareholders on the shares forfeited.
To Calls-in-Arrear A/c		with the amount of unpaid calls.

*Alternatively:*

(ii) Where the unpaid calls have not been transferred to Calls-in-Arrear A/c and the respective call accounts are showing balances representing unpaid amounts:

Share Capital A/c	Dr.	with the amount of called up value of shares forfeited i.e., no. of shares
-------------------	-----	--

	forfeited x the called up value per share.
To Shares Forfeited A/c	with the amount already paid up by the shareholders on the shares forfeited.
To Share Allotment A/c	with the amount failed on allotment, if any.
To Share First Call A/c	with the amount failed on first call, if any.
To Share Final Call A/c	with the amount failed on final call, if any.

**Illustration 9**

X Ltd. forfeited 1,000 equity shares of ₹ 10 each issued at par for non-payment of the first call of ₹ 2 per share and the final call of ₹ 3 per share. Give journal entry for the forfeiture.

**Solution:****Journal Entry**

<i>Particulars</i>	<i>Dr. (Rs)</i>	<i>Cr. (Rs)</i>
Equity Share Capital A/c (1,000 x ₹ 10)*	Dr. 10,000	
To Shares Forfeited A/c (1,000 x ₹ 5)*		5,000
To Calls-in-Arrear A/c (1,000 x ₹ 5)*		5,000
(Forfeiture for 1000 equity shares for non-payment of the first call of ₹ 2 per share and the final call of ₹ 3 per share as per Board's resolution dated...)		

*Alternatively:*

Equity Share Capital A/c	Dr. 10,000	
To Shares Forfeited A/c		5,000
To Equity Share First Call A/c		2,000
To Equity Share Final Call A/c		3,000

(Forfeiture of 1000 equity shares for non-payment of the first call of ₹ 2 per share and the final call of ₹ 3 per share as per Board's Resolution dated...)

\* Shown by way of explanation.

**(b) Forfeiture of Shares Issued at Premium**

- (i) Where shares to be forfeited were issued at a premium and the premium money remained unpaid, the credit already given to the „Securities Premium A/c’ will be cancelled at the time of forfeiture of the shares by debiting “Securities Premium A/c”. The accounting entry will be as follows:

Share Capital A/c	Dr.	with the amount of called up value of shares forfeited, i.e., no. of shares forfeited x called up value per share. (excluding premium).
Securities Premium A/c	Dr.	with the amount of premium money remaining unpaid on shares forfeited.
To Shares Forfeited A/c		with the amount already paid by the shareholders on the shares forfeited.
To Calls-in-Arrear A/c		with the amount unpaid on calls.

*Alternatively:*

Share Capital A/c	Dr.	with the amount of called up value of shares forfeited, i.e., no. of shares forfeited x called up value per share. (excluding premium).
Securities Premium A/c	Dr.	with the amount of premium money remaining unpaid on shares forfeited.
To Shares Forfeited A/c		with the amount already paid by the shareholders on the shares forfeited.
To Share Allotment A/c		with the amount failed on allotment, if any.
To Share First Call A/c		with the amount failed on first call, if any.
To Share Final Call A/c		with the amount failed on final call, if any.

- (ii) Where shares to be forfeited were issued at a premium and the premium money was duly received on the shares to be forfeited, Securities Premium Account already credited at the time of making call will not be cancelled at the time of forfeiture of the shares.

Section 78(2) of the Companies Act imposes restrictions on the application of “Securities Premium Account”. It is important to note here that the balance standing at the credit in the Securities Premium Account may not be proportionate to the shares issued in such a case.

In such a case, the accounting entry on forfeiture will be the same as the one passed in case of shares issued at par.

### Illustration 10

X Ltd. forfeited 1,500 Equity Shares of ₹ 10 each, issued at a premium of ₹ 5 per share for non-payment of allotment money of ₹ 8 per share (including share premium ₹ 5 per share) the first call of ₹ 2 per share and the final call of ₹ 3 per share. Give the journal entry for the forfeiture.

### Solution:

#### Journal Entry

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Equity Share Capital A/c (1500 x ₹ 10)*	Dr.	15,000	
Securities Premium A/c (1500 x ₹ 5)*	Dr.	7,500	
To Shares Forfeited A/c (1,500 x ₹ 2)*			3,000
To Calls-in-Arrear A/c (1,500 x ₹ 13)*			19,500

(Forfeiture of 1,500 equity shares of ₹ 10 each for non-payment of allotment money of ₹ 8 per share, including a premium of ₹ 5 per share, first call money of ₹ 2 per share and the final call money @ ₹ 3 per share as per Board's resolution dated...)

### Alternatively:

Equity Share Capital A/c	Dr.	15,000	
Securities Premium A/c	Dr.	7,500	
To Shares Forfeited A/c			3,000
To Equity Share Allotment A/c			12,000
To Equity Share First Call A/c			3,000
To Equity Share Final Call A/c			4,500

(Forfeiture of 1,500 equity shares of ₹ 10 each for non-payment of allotment money of ₹ 8 per share, including a premium of ₹ 5 per share, first call money of ₹ 2 per share and the final call money @ ₹ 3 per share as per Board's resolution dated...)

\* Given by way of explanation.

**Illustration 11**

X Ltd. forfeited 1,500 equity shares of ₹ 10 each issued at a premium of ₹ 5 per share payable with the allotment money, for non-payment of the first call money of ₹ 2 per share and the final call money of ₹ 3 per share. Give journal entries.

**Solution:****Journal Entry**

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Equity Share Capital A/c (1,500 x ₹ 10)	Dr. 15,000	
To Shares Forfeited A/c (1,500 x ₹ 5)		7,500
To Calls-in-Arrear A/c (1,500 x ₹ 5)		7,500
(Forfeiture of 1,500 equity shares of ₹ 10 each for non-payment of the first call money of ₹ 2 per share and the final call money of ₹ 3 per share as per Board's resolution dated...)		

*Alternatively:*

Equity Share Capital A/c	Dr. 15,000	
To Shares Forfeited A/c		7,500
To Equity Share First Call A/c		3,000
To Equity Share Final Call A/c		4,500
(Forfeiture of 1,500 equity shares of ₹ 10 each for non-payment of the first call money of ₹ 2 per share and the final call money of ₹ 3 per share as per Board's resolution dated...)		

**Note:** As the premium has already been received on these shares, Securities Premium Account will not be debited.

**( c ) Forfeiture of Shares Issued at Discount**

If shares to be forfeited were issued at discount, a proportionate amount of discount allowed on such shares should be written off. Since discount on issue of shares, being a loss, is debited to "Discount on Issue of Shares Account" at the time of issue of shares, it should be credited at the time of forfeiture of the shares. On re-issue of such forfeited shares again, Discount on Issue of Shares Account is debited making the discount on issue of shares proportionate to the shares actually issued. Thus, the position in respect of discount is quite distinct from the position in respect of premium on issue of shares. The accounting entry on forfeiture will be as follows:

Share Capital A/c	Dr.	with the amount of called up value of shares forfeited, i.e., No. of shares
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		forfeited x called up value per share (including discount).
To Shares Forfeited A/c		with the amount already paid by the shareholders on the shares forfeited i.e., No. of shares forfeited x amount paid per share.
To Discount on Issue of Shares A/c		with the amount of discount allowed previously on shares forfeited, i.e., No. of shares forfeited x discount allowed per share.
To Calls-in-Arrear A/c		with the amount of unpaid calls i.e., No. of shares forfeited x unpaid amount per share.

*Alternatively:*

Share Capital A/c	Dr.	with the amount of called up value of shares forfeited, i.e., No. of shares forfeited x called up value per share (including discount).
To Shares Forfeited A/c		with the amount already paid by the shareholders on the shares forfeited.
To Discount on Issue of Shares A/c		with the amount of discount allowed previously on shares forfeited.
To Respective Calls		with the amount unpaid on respective calls, [i.e., No. of shares forfeited x amount due on respective call per share.]

**Illustration 12**

X Ltd., forfeited 1,000 equity shares of ₹ 10 each, issued at a discount of 10% for non-payment of the first call of ₹ 2 and the final call of ₹ 3 per share. Show the necessary journal entry.

**Solution:****Journal Entry**

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Equity Share Capital A/c (1,000 x ₹ 10)	Dr. 10,000	
To Shares Forfeited A/c (1,000 x ₹ 4)		4,000
To Discount on Issue of Shares A/c (1,000 x ₹ 1)		1,000

To Calls-in-Arrear A/c (1,000 x ₹ 5)	5,000
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(Forfeiture of 1,000 equity shares issued at a discount of 10% for non-payment of first call money of ₹ 2 per share and final call money of ₹ 3 per share as per Board's resolution dated...)

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*Alternatively:*

Equity Share Capital A/c	Dr.	10,000	
To Shares Forfeited A/c			4,000
To Discount on Issue of Shares A/c			1,000
To Equity Share First Call A/c			2,000
To Equity Share Final Call A/c			3,000

(Forfeiture of 100 equity shares issued at a discount of 10% for non-payment of first call money of ₹ 2 per share and final call money of ₹ 3 per share as per Board's resolution dated...)

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## 19. RE-ISSUE OF FORFEITED SHARES

Table-A empowers the Board of directors to sell or otherwise dispose of forfeited shares on such terms as it thinks fit. However, the amount receivable on re-issue of such shares together with the amount already received from the defaulting member, shall not, in any case, be less than the face value of the shares. Thus, forfeited shares may be re-issued at par, at a premium or even at a discount.

If forfeited shares are re-issued at a discount, the amount of discount can, in no case, exceed the amount credited to Shares Forfeited Account. Discount thus allowed on re-issue has to be debited to Shares Forfeited Account. If the discount allowed on re-issue is less than the forfeited amount, there will be a surplus left in the Shares Forfeited Account which will be treated as net gain on forfeiture. As this gain is in the nature of capital profits (i.e., profits earned not in the normal course of business), it should be transferred to Capital Reserve Account. Capital Reserve Account will appear on the Liabilities side of the Balance Sheet under the head "Reserves and Surplus".

If forfeited shares are re-issued at par, the entire amount standing to the credit of Shares Forfeited Account would be treated as net gain and transferred to Capital Reserve Account.

If forfeited shares are re-issued at a premium, the amount of such premium should be credited to Securities Premium Account. In such a case also, the entire amount standing to the credit of Shares Forfeited Account would be treated as net gain and transferred to Capital Reserve Account.

On re-issue of forfeited shares which were originally issued at a discount, Discount on Issue of Share Account should be reinstated with the proportionate

amount to the shares re-issued so that the discount on issue of shares may be proportionate to the shares issued. In such a case, net gain on re-issue should be calculated after taking into account such discount.

In case only a part of the forfeited shares are re-issued, only the proportionate amount representing the net gain on the shares re-issued should be transferred to Capital Reserve Account and the balance representing the amount received on forfeited shares not yet re-issued should be left in the Shares Forfeited Account itself. This amount should be shown as addition to the paid up capital on the liabilities side of the balance sheet.

### Accounting Entries

#### (i) If forfeited shares are re-issued at par

1. On re-issue of shares:

Bank	Dr.	with the amount received on reissue
To Share Capital A/c		i.e. no. of shares re-issued x amount received per share.

2. On transfer of Shares Forfeited Account to Capital Reserve Account:

Shares Forfeited A/c	Dr.	with the forfeited amount on shares re-issued.
To Capital Reserve A/c		

#### (ii) If forfeited shares are re-issued at a premium

1. On re-issue of shares:

Bank A/c	Dr.	with the total amount received on re-issue.
To Share Capital A/c		with nominal value or paid-up value of shares.
To Securities Premium A/c		with the premium money.

2. On transfer of Shares Forfeited A/c to Capital Reserve A/c:

Shares Forfeited A/c	Dr.	with the forfeited amount on shares re-issued
To Capital Reserve A/c		

#### (iii) If forfeited shares are re-issued at a discount

1. On re-issue of shares:

Bank	Dr.	with the amount received on re-issue.
Shares Forfeited A/c	Dr.	with the discount allowed on re-issue.
To Share Capital A/c		with the total.

2. On transfer of balance in Shares Forfeited Account, if any, to Capital Reserve Account:

Shares Forfeited A/c	Dr.	with the net gain, if any, on shares re-issued.
To Capital Reserve A/c		

(iv) Re-issue of forfeited shares which were originally issued at a discount

1. On re-issue of shares:

Bank A/c	Dr.	with the amount received on re-issue.
Discount on Issue of Shares A/c	Dr.	with the amount of discount originally allowed.
Shares Forfeited A/c	Dr.	with the amount of short fall if any.
To Share Capital A/c		with the total.

2. On transfer of balance in Share Forfeited A/c, if any, to Capital Reserve A/c:

Shares Forfeited A/c	Dr.	with the net gain, if any on shares re-issued.
To Capital Reserve A/c		

### Illustration 13

Give journal entries for the forfeiture and re-issue of shares in the following cases:

- P Ltd. forfeited 300 shares of ₹ 10 each, fully called up for non-payment of final call money of ₹ 4 per share. These shares were subsequently re-issued by the company for ₹ 10 per share as fully paid-up.
- Q Ltd. forfeited 300 shares of ₹ 10 each, fully called up for non-payment of final call money of ₹ 4 per share. These shares were subsequently re-issued by the company for ₹ 12 per share as fully paid-up.
- R Ltd. forfeited 200 shares of ₹ 10 each, ₹ 8 per share being called up on which a shareholder paid application and allotment money of ₹ 5 per share but did not pay the first call money of ₹ 3 per share. Of these forfeited shares, 150 shares were subsequently re-issued by the company as fully paid-up for ₹ 8 per share.
- S Ltd. forfeited 100 shares of ₹ 10 each, ₹ 8 per share being called up, which were issued at a discount of 10% for non-payment of first call money of ₹ 3 per share. Of these forfeited shares, 80 shares were subsequently re-issued by the company at ₹ 5 as ₹ 8 paid-up.

**Solution:**

#### Journal Entries

Particulars	Dr. (₹)	Cr. (₹)
(a) 1. Share Capital A/c (300 x ₹ 10)	Dr. 3,000	
To Shares Forfeited A/c (300 x ₹ 6)		1,800

To Shares Final Call A/c (300 x ₹ 4)			1,200
(Forfeiture of 300 shares of ₹ 10 each for non-payment of final call money of ₹ 4 per share as per Board's resolution dated...)			
2. Bank	Dr.	3,000	
To Share Capital A/c (300 x ₹ 10)			3,000
(Re-issue of 300 forfeited shares of ₹ 10 each fully paid-up as per Board's resolution dated...)			
3. Shares Forfeited A/c	Dr.	1,800	
To Capital Reserve A/c			1,800
(Transfer of profit on re-issue of forfeited shares to Capital Reserve A/c)			
(b) 1. Share Capital A/c	Dr.	3,000	
(300 x ₹ 10)			
To Shares Forfeited A/c (300 x ₹ 6)			1,800
To Share Final Call A/c (300 x ₹ 4)			1,200
(Forfeiture of 300 shares of ₹ 10 each for non-payment of final call money of ₹ 5 per share as per Board's resolution dated...)			
2. Bank	Dr.	3,600	
(300 x ₹ 12)			
To Share Capital A/c (300 x ₹ 10)			3,000
To Securities Premium A/c (300 x ₹ 2)			600
(Re-issue of forfeited shares of ₹ 10 each at a premium of ₹ 2. per share as per Board's resolution dated...)			
3. Shares Forfeited A/c	Dr.	1,800	
To Capital Reserve A/c			1,800
(Transfer of profit on re-issue of forfeited shares to Capital Reserve A/c)			
(c) 1. Share Capital A/c	Dr.	1,600	
(200 x ₹ 8)			
To Shares Forfeited A/c (200 x ₹ 5)			1,000

To Share First Call A/c (200 x ₹ 3)		600
<u>(Forfeiture of 200 shares of ₹ 10 each ₹ 8 being called up for non-payment of first call money of ₹ 3 per share as per Board's resolution dated...)</u>		
2. Bank A/c (150 x ₹ 8)	Dr.	1,200
Share Forfeited A/c (150 x ₹ 2)	Dr.	300
To Share Capital A/c		1,500
<u>(Re-issue of 150 forfeited shares of ₹ 10 each as fully paid-up for ₹ 8 per share, i.e., at a discount of ₹ 2 per share as per Board's resolution dated...)</u>		
3. Share Forfeited A/c	Dr.	450
To Capital Reserve A/c		450
<u>(Transfer of capital profit proportionate to forfeited shares re-issued, i.e., on 150 shares to Capital Reserve A/c)</u>		
(d) 1. Share Capital A/c (100 x ₹ 8)	Dr.	800
To Share Forfeited A/c (100 x ₹ 4)		400
To Discount on Issue of Shares A/c (100 x ₹ 1)		100
To Share First Call A/c (100 x ₹ 3)		300
<u>(Forfeiture of 100 shares of ₹ 10 each, ₹ 8 being called up, issued at a discount of ₹ 1 per share for non-payment of first call @ ₹ 8 per share as per Board's resolution dated...)</u>		
2. Bank A/c (80 x ₹ 5)	Dr.	400
Discount on Issue of Shares A/c (80 x ₹ 1)	Dr.	80
Share Forfeited A/c (80 x ₹ 2)	Dr.	160
To Share Capital A/c (80 x ₹ 8)		640
<u>(Re-issue of 80 forfeited shares of ₹ 10 each, ₹ 8 being called up originally issued at dis-</u>		

count of 10% for ₹ 5 per share credited as ₹8 per share as per Board's resolutions dated...)

3. Shares Forfeited A/c	Dr.	160	
To Capital Reserve A/c			160

(Transfer of Capital Profit proportionate to forfeited shares re-issued, i.e., on 80 shares to Capital Reserve A/c)

## 20. FORFEITURE AND RE-ISSUE OF SHARES ALLOTTED ON PRO-RATA BASIS IN CASE OF OVER-SUBSCRIPTION

In case, the shares of a Company are over-subscribed, it is not possible for the company to satisfy the demand of all the applicants. In such a case allotment may be made on pro-rata basis, i.e., proportionately. For example, 10,000 shares are allotted pro-rata among the applicants for 12,000 shares. In this case, the ratio between allotment of shares and application for shares will be 10,000 : 12,000 or 5 : 6, i.e., those applying for every 6 shares will be allotted 5 shares.

If shares are allotted pro-rata, the excess application money received on shares allotted will be retained by the company and adjusted subsequently against allotment money and/or call money.

If such shares are subsequently forfeited for non-payment of allotment money and/or call money, the entries will be the same, but it may involve some difficulty in calculation. In such a case, it is to be noted carefully that if there is any excess amount received along with the application and it is adjusted against the allotment money which is failed by the shareholder, such amount should be deducted from the amount due on allotment to arrive at the net amount failed by the shareholder.

### Illustration 14

A limited company issued a prospectus inviting applications for 2,000 shares of ₹10 each at a premium of ₹ 2 per share payable as follows:

On Application	--	₹ 2
On Allotment	--	₹ 5 (including premium)
On First Call	--	₹ 3
On Second and Final Call	--	₹ 2

Applications were received for 3,000 shares and allotment was made pro-rata to the applicants of 2,400 shares. Money overpaid on applications was employed on account of sum due on allotment.

Ramesh, to whom 40 shares were allotted, failed to pay the allotment money and on his subsequent failure to pay the first call, his shares were forfeited. Mohan, the holder of 60 shares failed to pay the two calls and his shares were forfeited after the second and final call.

Of the shares forfeited, 80 shares were sold to Krishna credited as fully paid for ₹ 9 per share, the whole of Ramesh's share being included.

Show journal and cash book entries and the Balance Sheet.

**Solution:**

*Working Notes:*

- Ratio between allotment of shares and application for shares = 2,000 : 2,400 = 5 : 6, i.e., those applying for every 6 shares will be getting 5 shares.
- Ramesh was allotted 40 shares.  
Therefore, Ramesh must have applied for  $40 \times \frac{6}{5} = 48$  shares.
- Ramesh must have paid excess application money on  $(48 - 40) = 8$  excess applications @ ₹ 2 per share, i.e.,  $8 \times ₹ 2 = ₹ 16$  which was retained by the company for adjustment against allotment money.
- Allotment money due from Ramesh on 40 shares @ ₹ 5 per share =  $40 \times ₹ 5 = ₹ 200$ .
- As the allotment money was failed by Ramesh against which excess money paid on application was adjusted, the net amount failed by Ramesh on Allotment = ₹  $(200 - 16) = ₹ 184$ .
- As Mohan paid the allotment money and the excess amount paid by him along with the application had already been adjusted, pro rata allotment in this case has no significance.
- Amount to be transferred to Capital Reserve A/c from Shares Forfeited A/c has to be determined as follows:

	₹
Amount forfeited on 40 shares held by Ramesh ( $48 \times ₹ 2$ )	96
Amount forfeited on 60 shares held by Mohan ( $60 \times ₹ 5$ )	<u>300</u>
Total amount credited to Shares Forfeited A/c	396
Less: Amount on 20 forfeited shares held by Mohan which are not yet re-issued ( $20 \times ₹ 5$ )	<u>100</u>
	296
Less: Discount allowed @ ₹ 1 on 80 shares ( $80 \times ₹ 1$ )	80
Net gain on 80 forfeited shares which are reissued to be transferred to Capital Reserve	<u>216</u>

**Cash Book (Bank Column)**

<i>Dr.</i>		<i>Cr.</i>
<i>Particulars</i>	₹	<i>Particulars</i>
To Share application A/c (Application money on 3000 shares @ ₹ 2 per share)	6,000	By Share Application A/c (Refund of application money on 600 shares)
		1,200

To Shares Allotment A/c (Balance of allotment money on 2,000 shares less amount failed by Ramesh)	9,016	rejected @ ₹ 2 per share)	
		By Balance c/d	24,036
To Share First Call A/c (First call money on 1900 shares, i.e., 2000 shares - (40 + 60) shares @ ₹ 3 per share)	5,700		
To Shares Final call A/c (Final call money on 1900 shares, i.e., 1960 shares less 60 shares held by Mohan who failed @ ₹ 2 per share)	3,700		
To Share Capital A/c (Amount received on re-issue of 80 forfeited shares @ ₹ 9 per share)	720		
	<u>25,236</u>		<u>25,236</u>
To Balance b/d	24,026		

### Journal Entries

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Share Application A/c	Dr.	4,000	
To Share Capital A/c			4,000
<u>(Transfer of application money to share capital account as per Board's resolution dated...)</u>			
Share Allotment A/c	Dr.	10,000	
To Share Capital A/c			6,000
To Securities Premium A/c			4,000
<u>(Allotment of 2000 shares to the applicants for 2400 shares pro-rata and allotment money due @ ₹ 5 per share including premium of ₹ 2 per share as per Board's resolution dated...)</u>			
Share Application A/c	Dr.	800	
To Share Allotment A/c			800
<u>(Surplus application money adjusted towards share allotment account)</u>			

Share First Call A/c	Dr.	6,000	
To Share Capital A/c			6,000
<u>(First call money due on 2000 shares @ ₹ 3 per share as per Board's resolution dated...)</u>			
Share Capital A/c	Dr.	320	
Securities Premium A/c	Dr.	80	
To Shares Forfeited A/c			96
To Share Allotment A/c			184
To Share First Call A/c			120
<u>(Forfeiture of 40 shares held by Ramesh for non-payment of allotment of money @ ₹ 5 per share including premium @ ₹ 2 per share and first call money @ ₹ 3 per share as per Board's resolution dated...)</u>			
Share Final Call A/c	Dr.	3,920	
To Share Capital A/c			3,920
<u>(Share final call due on 1960 shares (i.e., 2000 shares-Ramesh's 40 shares forfeited) @ ₹ 2 per share as per Board's resolution dated...)</u>			
Share Capital A/c	Dr.	600	
To Shares Forfeited A/c			300
To Share First Call A/c			180
To Share Final Call A/c			120
<u>(Forfeited of 60 shares held by Mohan for non-payment of first call money @ ₹ 3 per share and final call money @ ₹ 2 per share as per Board's resolution dated...)</u>			
Shares Forfeited A/c	Dr.	80	
To Share Capital A/c			80
<u>(Discount allowed on re-issue of 80 forfeited share @ ₹ 1 per Board's resolution dated...)</u>			
Shares Forfeited A/c	Dr.	216	
To Capital Reserve A/c			216
<u>(Transfer of net gain on re-issue of 80 forfeited shares to capital Reserve A/c)</u>			

**Balance Sheet of.....Ltd. as at.....**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Share Capital:		Current Assets, Loans and	
Authorised Capital	?	Advances	
Issued, Subscribed and		A. Current Assets	
Paid-up Capital		Cash at Bank	24,036
1980 shares of ₹ 10			
each fully paid-up	19,800		
Shares Forfeited A/c	100		
Reserves and Surplus:			
Securities Premium Account	3,920		
Capital Reserve Account	<u>216</u>		
	24,036		<u>24,036</u>

**Illustration 15**

Varun Ltd. was registered with a nominal capital of ₹20,00,000 in equity shares of ₹100 each. 10,000 of these shares were issued to the public at a premium of ₹20 per share, payable as to ₹20 on application, ₹45 on allotment including premium, ₹25 on first call and the balance on final call. Applications were received for 13,000 shares and allotment was made pro-rata to the applicants of 12,000 shares. Money over-paid on application was employed on account of sums due on allotment. Sudhir holding 200 shares paid the whole of the amount due on first call along with the allotment but failed to pay final call. Pradeep holding 300 shares failed to pay the two calls and Joshi holding 400 shares failed to pay the final call.

All these shares were forfeited after the final call. Of the shares forfeited, 200 shares belonging to Pradeep and 200 shares belonging to Joshi were sold to Rajesh as fully paid for ₹90 per share.

Show the journal entries and cash book in the books Varun Ltd.

**Solution:****Varun Ltd.****Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Share Application Account	Dr.	2,40,000	
To Equity Share Capital Account			2,00,000
To Share Allotment Account		40,000	
(Transfer of application money to share capital, and allotment accounts)			
Share Allotment Account	Dr.	4,50,000	
To Equity Share Capital Account			2,50,000

To Securities Premium Account			2,00,000
<u>(Money due on allotment of 10,000 shares @ ₹45 per share including premium of ₹20)</u>			
Share First Call Account	Dr.	2,50,000	
To Equity Share Capital Account			2,50,000
<u>(Amount due on first call)</u>			
Calls-in-Advance Account	Dr.	5,000	
Calls-in-Arrears Account	Dr.	7,500	
To Share First Call Account			12,500
<u>(Calls in advance received and calls on arrears transferred to share first call account)</u>			
Share Second and Final Call Account	Dr.	3,00,000	
To Equity Share Capital Account			3,00,000
<u>(Amount due on second and final call)</u>			
Call-in-Arrears Account	Dr.	27,000	
To Equity Share Final Call Account			27,000
<u>(Call in arrears on 900 shares @ ₹30 each)</u>			
Equity Share Capital Account	Dr.	90,000	
To Forfeited Shares Account			55,500
To Calls-in-Arrears Account			34,500
<u>(Being the forfeiture of 900 shares on account of call-in-arrears)</u>			
Forfeited Shares Account	Dr.	4,000	
To Equity Share Capital Account			4,000
<u>(Discount allowed on re-issue of 400 shares @ ₹10)</u>			
Forfeited Shares Account	Dr.	19,000	
To Capital Reserve Account			19,000
<u>(Gain on reissue of forfeited shares transferred to capital reserve)</u>			

<i>Dr.</i>		<b>Cash Book</b>		<i>Cr.</i>	
<i>Particulars</i>		₹	<i>Particulars</i>		₹
To Equity Share Application Account	2,60,000	By Share Application Account		20,000	
To Equity Share Allotment Account	4,10,000	By Balance C/d		12,01,500	
To Calls in Advance Account	5,000				
To Equity Share First Call Account	2,37,500				

To Equity Share Second and Final Call Account	2,73,000	
To Equity Capital Account	<u>36,000</u>	
	<u>12,21,500</u>	<u>12,21,500</u>

### Working Notes

₹

(i) Calculation of amount to be forfeited

Sudhir : On 200 shares @ ₹70(20 + 25 + 25)	14,000
Pradeep: On 300 shares @ ₹45(20 + 25)	13,500
Joshi : On 400 shares @ ₹70(20 + 25 + 25)	<u>28,000</u>
Total	<u>55,000</u>

(ii) Balance retained in Forfeited Shares Account

Sudhir : On 200 shares @ ₹70	14,000
Pradeep: On 100 shares @ ₹45	4,500
Joshi : On 200 shares @ ₹70	<u>14,000</u>
Total	<u>32,500</u>

(iii) Amount transferred to capital reserve

Total amount forfeited		55,500
Less: Allowed as discount on reissue	4,000	
Less: Retained in Forfeited Shares Account	<u>32,500</u>	<u>36,500</u>
		<u>19,000</u>

## 21. BUY-BACK OF SHARES

When a company has substantial cash resources, it may like to buy its own shares from the market particularly when the prevailing rate of its shares in the market is much lower than the book value or what the company perceives to be its true value. Buy back of shares enables the company to go back to its shareholders and offers to purchase from them the shares they hold. Through the introduction of Section 77A in the Companies Act, 1956 by the Companies (Amendment) Act, 1999, the Central Government has allowed Indian companies to buy-back their shares from the open market.

Section 77A of the Companies (Amendment) Act, 1999 states that a company may purchase its own shares or other specified securities (e.g. employees' stock option or other securities as may be notified by the Central Government from time to time) out of:

- (i) its free reserves (i.e. reserves which are free for distribution as dividend) and includes balance of securities premium account; or/and
- (ii) the proceeds of any shares or other specified securities.

However, no buy-back of any kind of shares or other specified securities shall be made out of the proceeds of the earlier issue of the same kind of shares or same kind of other securities. Thus for example, if equity shares are to be bought back, preference shares or debentures may be issued for the purpose.

According to Section 77A(2) the following conditions must be satisfied in order to buy-back the shares:

- (a) The buy-back is authorised by its articles of association of the company.
- (b) A special resolution has been passed in general meeting of the company authorising the buy-back.
- (c) Companies are allowed to buy back their own shares to the extent of twenty five per cent of the paid up capital and free reserves. Buy-back of equity shares cannot exceed twenty-five per cent of the total paid-up equity capital of the company in any financial year. Since shares can be bought back at a premium, the stipulation of twenty-five per cent of the paid-up capital and free reserves (inclusive of securities premium) is the maximum amount that can be utilised for buy-back purpose.
- (d) The ratio of debt (secured and unsecured) owned by the company is not more than twice the capital and free reserves of the company after such buy-back. Debts for this purpose would also include trade creditors and other current liabilities.
- (e) The existing shares or other securities for buy-back should be fully paid-up.
- (f) The buy back of shares or other specified securities listed on any recognised stock exchange is in accordance with the regulations made by the Securities and Exchange Board of India in this behalf.

Section 77A(3) states that the notice of meeting at which special resolution on buy back is proposed to be passed has to be accompanied by an explanatory statement providing for:

- (a) full and complete disclosure of all material facts.
- (b) the necessity for the buy back.
- (c) the class of security intended to be purchased under the buy- back.
- (d) the amount to be invested under the buy-back.
- (e) the time limit for completion of buy-back.

Every buy-back shall be completed within 12 months from the date of passing the special resolution. The buy-back may be made:

- (a) from the existing security holders on a proportionate basis; or
- (b) from the open market; or
- (c) from odd lots, i.e. where the lot of securities in a listed company is smaller than such marketable lot as may be specified by the stock exchange; or
- (d) by purchasing the securities issued to employees of the company pursuant to a scheme of stock option or sweat equity.

Where a company completes buy-back of its shares or securities, it cannot make further issue of the same kind of shares or specified securities within a period of six months except by way of bonus issue or in the discharge of subsisting obligations such as conversion of warrants, stock option schemes, conversion of preference shares or debentures into equity shares.

Where a company buys-back its own securities, it has to extinguish and physically destroy the securities so bought back within seven days of the last date of completion of buy-back.

Section 77B of the Act states that no company shall purchase its shares or other specified securities:

- (a) through any subsidiary company including its own subsidiary companies; or
- (b) through any investment company or group of investment companies; or
- (c) if a default in redemption of deposit or any interest thereon, redemption of debentures or preference shares or payment of dividend to any shareholder or repayment of any term loan or interest payable thereon to any financial institution or bank is subsisting.

There is no cap on the price payable for buy-back of shares or specified securities. After the completion of buy-back, a return containing such particulars relating to the buy-back as may be prescribed has to be filed with the Registrar of Companies and Securities and Exchange Board of India within thirty days of such completion.

Section 77AA of the Act states that where a company purchases its own shares out of free reserves, then a sum equal to the nominal value of the shares so purchased shall be transferred to the Capital Redemption Reserve Account. This is suggested following the accounting treatment mentioned in case of redemption of preference shares out of distributable profit under Section 80(1)(d) of the Companies Act, 1956. Premium paid on buy-back should be adjusted against free reserves. This is possible to adjust against balance of general reserve or profit and loss account or any other free reserve or against securities premium account. Nominal amount redeemed out of free reserves or securities premium account should be earmarked as capital redemption reserve by making transfer from the respective sources.

#### **FREE RESERVES**

The term "free reserves" means those reserves which as per the last audited balance sheet of the company are free for distribution as dividend and shall include balance to the credit of securities premium account. For computing free reserves it becomes necessary to look into the provisions of Section 205 of the Companies Act, 1956. Dividend can be distributed out of profit of the current year or any previous year after providing for depreciation in accordance with the rates specified in Schedule XIV to the Companies Act, 1956. Realised capital profits arising out of sale of fixed assets/investments, are generally accounted through profit and loss account. Hence free reserves include such profits also. The balance in general reserve and profit and loss account is automatically treated as free reserves. Dividend equalisation reserve or dividend fluctuation reserve is also treated as free reserve. However, revaluation reserve, represents unrealised profit and hence cannot be treated as distributable

profit. Capital Redemption Reserve created under Section 80(1)(d) of the Companies Act, 1956 is a free reserve. It can be applied by the company in paying up unissued shares of the company as fully paid up bonus shares. But it cannot be utilised for payment of dividend. Therefore this is not a free reserve for buy-back of shares.

**Difference Between Securities Premium and Share Premium:** Securities premium account is a broader term than share premium. Share premium account balance represents only premium on issue of equity and preference shares whereas securities premium account balance represents premium on issue of shares, debentures, bonds and other financial instruments. It is possible that loss on redemption of debentures/bonds and related issue expenses may be adjusted against securities premium account. Similarly, premium on redemption of preference shares is adjusted against securities premium account.

As a prudence, it would be better to make prospective adjustments for premium payable on redemption of preference shares before utilising the balance of securities premium account for buy-back purpose. Securities premium account net of adjustment forms part of free reserve.

As matter of prudence the entire free reserve should not be utilised for the purpose of buy-back. The following items should be adjusted against free reserves to arrive at the net amount of free reserves that can be utilised for the purpose of buy-back:

- (i) Unamortised miscellaneous expenditure.
- (ii) Unamortised deferred revenue expenditure.
- (iii) Contingent liabilities likely to mature and not provided for.
- (iv) Purchased goodwill.
- (v) Any diminution of long-term investments not provided for.
- (vi) Any impairment in the value of tangible assets not provided for.

### **Accounting Entries**

The following journal entries may be passed to record buy back of shares:

- (i) In case investments are sold for buying back own shares:

Bank	Dr.
To Investment Account	

(The difference if any, will be credited to Profit on Sale of Investment Account or debited to Loss on Sale of Investment Account, which in turn will be transferred profit and loss account).

**Note:** Generally free reserves are already invested in the assets/investment of the company, thus to utilise free reserves, assets/investments are sold.

- (ii) In case the proceeds of fresh issues are used for buy-back purpose, then on fresh issue:

Bank	Dr.
To Debentures/Other Investments Account	
To Securities Premium Account (if any)	

(iii) For buying back of shares:

Equity Shareholders	Dr.	(with the amount paid)
To Bank		

(iv) For cancellation of shares bought back:

Equity Share Capital Account	Dr.	(with the nominal value of shares bought back)
Free Reserves/Securities Premium Account	Dr.	(with the excess amount/premium paid over nominal value)
To Equity Shareholders		(with the amount paid)

(v) In case the shares are bought back at a discount:

Equity Share Capital Account	Dr.	(with the nominal value)
To Equity Shareholders		(with the amount paid)
To Capital Reserve Account		(with the amount of discount on buy-back)

(vi) For transfer of nominal value of shares purchased out of free reserves/securities premium to Capital Redemption Reserve Account:

Free Reserves	Dr.	(with the amount transferred)
Securities Premium Account	Dr.	(with the amount transferred)
To Capital Redemption Reserve Account		(with the nominal value of shares bought back)

(vii) For expenses incurred in buy-back of shares:

Buy-back Expenses	Dr.	(with the amount)
To Bank		

(viii) For transfer of buy-back expenses:

Profit and Loss Account	Dr.
To Buy-back Expenses	

### Illustration 16

The following is the balance sheet of Divya Paints Ltd. as on 31st March, 2011

(₹ in 000's)

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Issued and paid-up Capital:		Land and building	630
3,00,000 equity shares of		Plant and machinery	2,350
₹ 10 each	3,000	Furniture and fitting	350
General reserve	700	Investments	370
Securities premium	505	Stock	1,200

14% Debentures	1,400	Sundry debtors	590
Sundry creditors	<u>460</u>	Cash and bank balance	<u>575</u>
	6,065		6,065

On 1st April, 2011 the shareholders of the company have approved the scheme of buy-back of equity shares as under:

- (i) 15% of the equity shares would be bought back at ₹ 18.
- (ii) General reserve balance may be utilised for this purpose.
- (iii) Premium paid on buy back of shares should be met from securities premium account.
- (iv) Investments would be sold for ₹ 4,00,000.

Pass journal entries to record the above transactions and prepare the balance sheet of the company immediately after the buy-back of shares.

**Solution:**

**Divya Paints Ltd.**

**Journal Entries**

(₹ in '000's)

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Bank	Dr. 400	
To Investments		370
To Profit and Loss A/c		30
(Sale of investments, the profit being transferred to profit and loss account as per shareholder's special resolution)		
Shareholders	Dr. 810	
To Bank		810
(Purchase of 45,000 of own shares @ ₹ 18 each)		
Equity Share Capital A/c	Dr. 450	
Securities Premium A/c	Dr. 360	
To Shareholders		810
(Cancellation of 45,000 equity shares bought back, and securities premium utilised as per shareholders' special resolution)		
General Reserve	Dr. 450	
To Capital Redemption Reserve A/c		450
(Transfer of general reserve utilised to the extent of nominal value of shares bought back)		

**Balance Sheet of Divya Paints Ltd.****(after the buy-back)****(₹ in '000's)**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share capital:</i>		<i>Fixed Assets:</i>	
Issued and Paid-up Capital		Land and Building	630
2,55,000 equity shares of		Plant and Machinery	2,350
₹ 10 each, fully paid	2,550	Furniture and Fitting	350
<i>Reserve and Surplus:</i>		<i>Current Assets, Loans</i>	
General Reserve	250	<i>and Advances:</i>	
Securities Premium	145	(A) Current Assets:	
Capital Redemption Reserve	450	Stock	1,200
Profit and Loss Account	30	Sundry Debtors	590
<i>Secured Loans:</i>		Cash and bank balance	
14% Debentures	1,400	(575 + 400 - 810)	165
<i>Current Liabilities</i>		(B) Loans and advances	Nil
<i>and Provisions:</i>			
(A) Current Liabilities:			
Sundry Creditors	460		
(B) Provisions			
	Nil		
	<u>5,285</u>		<u>5,285</u>

**Note:** The debt-equity ratio of the company after buy-back of shares:

$$\begin{aligned} \text{Debt equity ratio} &= \frac{\text{Debt}}{\text{Equity (Capital and free reserves)}} \\ &= \frac{₹ 1,400 + 460}{₹ 2,550 + 250 + 145 + 30} = \frac{₹ 1,860}{₹ 2,975} = 0.625 : 1 \end{aligned}$$

The debt equity ratio is within the limit.

**Illustration 17**

The balance sheet of Powerlink Ltd. as on 31st March, 2011 is as follows:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share capital:</i>		<i>Fixed Assets</i>	
5,00,000 equity shares of		Investments	18,00,000
₹ 10 each, fully paid	50,00,000	Stock	11,87,000
General Reserve	6,50,000	Sundry debtors	9,60,000
Securities Premium	5,40,000	Cash and bank balance	7,10,000
Profit and Loss Account	3,75,000		
12% Debentures	25,00,000		

Term Loans	13,25,000	
Sundry Creditors	7,42,000	
Provision for tax	<u>1,25,000</u>	
	1,12,57,000	<u>1,12,57,000</u>

The shareholders adopted the resolution on the date of the abovementioned balance sheet to:

- (i) buy back 20% of the paid-up capital @ ₹ 15 each.
- (ii) issue 13% debentures of ₹ 5,00,000 at a premium of 10% to finance the buy back of shares.
- (iii) maintain a balance of ₹ 3,00,000 in general reserve account, and
- (iv) sell investments worth ₹ 8,00,000 for ₹ 6,50,000.

Pass necessary journal entries to record the above transactions and prepare the balance sheet immediately after the buy back.

**Solution:**

**Powerlink Limited**

**Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Bank	Dr.	6,50,000	
Profit and Loss Account	Dr.	1,50,000	
To Investments A/c			8,00,000
(Sale of investments worth ₹ 8,00,000 the loss is transferred to profit and loss account)			
Bank	Dr.	5,50,000	
To 13% Debentures A/c			5,00,000
To Securities Premium A/c			50,000
(Issue of debentures at a premium of 10% to finance the buy-back of shares)			
Shareholders A/c	Dr.	15,00,000	
To Bank			15,00,000
(Buy-back of 1,00,00 equity shares @ ₹ 15 each)			
Equity Share Capital	Dr.	10,00,000	
Securities Premium A/c	Dr.	5,00,000	
To Shareholders A/c			15,00,000

(Cancellation of re-purchased shares and utilisation of securities premium for the payment of premium amount on buy-back of shares)

General Reserve A/c	Dr.	3,50,000	
Profit and Loss A/c	Dr.	1,50,000	
To Capital Redemption Reserve A/c			5,00,000

(Utilisation of general reserve and profit and loss account to meet buy-back requirements)

### Balance sheet of Powerlink Ltd.

(After buy-back)

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share capital:</i>		<i>Fixed Assets:</i>	
4,00,000 equity shares		Fixed Assets	66,00,000
of ₹ 10 each,		Investments	10,00,000
fully paid	40,00,000	<i>Current Assets, Loans</i>	
<i>Reserves and Surplus:</i>		<i>and Advances:</i>	
Capital Redemption Reserve	5,00,000	A. Current, Assets:	
Securities Premium	90,000	Stock	11,87,000
General Reserve	3,00,000	Sundry Debtors	9,60,000
Profit and Loss Account	75,000	Cash and Bank Balance	
<i>Secured Loans:</i>		(7,10,000 + 6,50,000 + 12%	
Debentures	25,00,000	5,50,000 – 15,00,000)	4,10,000
13% Debentures	5,00,000	B. Loans and Advances	Nil
<i>Unsecured Loans</i>			
Term Loans	13,25,000		
<i>Current Liabilities</i>			
<i>and Provisions:</i>			
A. Current Liabilities			
Sundry Creditors	7,42,000		
B. Provisions			
Provision for Tax	1,25,000		
	1,01,57,000		1,01,57,000

**Note:** It is assumed that securities premium has been utilised exclusively for the payment of premium on buy-back of shares. Hence, as a matter of prudence, for the transfer of nominal value of shares bought back to Capital Redemption Reserve, the available balance in general reserve and profit and loss account is taken into account.

## 22. REDEMPTION OF PREFERENCE SHARES

Section 80 of the Companies Act provides for the issue and redemption of preference shares.

According to Section 80, a company limited by shares may, if authorised by its articles, issue preference shares, which are, or at the option of the company are liable to be redeemed. This section prescribes the following conditions with regard to the redemption of preference shares:

- (i) Such shares can be redeemed either out of the profits of the company which would otherwise available for dividend or out of the proceeds of a fresh issue of shares made for the purpose of redemption.
- (ii) Unless the shares are fully paid they cannot be redeemed.
- (iii) If any premium is to be payable on redemption, such premium has to be provided out of the profits of the company or out of the securities premium account.
- (iv) Where any such shares are redeemed out of profits, a sum equal to the nominal amount of the shares so redeemed must be transferred out of the profits of the company which would otherwise to be available for dividend to a reserve fund called 'Capital Redemption Reserve Account'. Otherwise, the provisions relating to the reduction of share capital of a company will apply, as if the Capital Redemption Reserve Account were paid-up share capital of the company.
- (v) The capital redemption reserve account may be applied by the company in paying up unissued shares of the company to be issued to the members of the company as fully paid bonus shares. Otherwise Capital Redemption Account must be maintained intact unless otherwise sanctioned by the Court.
- (vi) No company limited by shares, shall after the commencement of the Companies (Amendment) Act, 1996 issue any preference shares which is irredeemable or is redeemable after the expiry of a period of twenty years from the date of issue [80(5A)].
- (vii) The redemption of preference shares by a company shall not be taken as reducing the amount of its authorised share capital.
- (viii) Where in pursuance of this section, a company has redeemed or is about to redeem any preference shares, it shall have power to issue upto the nominal amount of the shares redeemed or to be redeemed as if those shares had never been issued.
- (ix) If new shares are issued for the purpose of redemption of preference shares, it will not be treated as increase of capital.
- (x) If a company fails to comply with the legal provisions of this section, the company and every officer of the company who is in default shall be punishable with fine which may extend to ten thousand rupees.

The main object of Section 80 of the Companies Act, 1956 is to protect the interests of the creditors of the company. As such the capital structure of the company will remain unaffected even after the redemption of the redeemable preference shares.

If the redeemable preference shares are redeemed out of the profits of the company which would otherwise be available for dividend, the Capital Redemption Reserve Account will take the place of the Redeemable Preference Share Capital Account after the redemption. Thus, in such a case, Capital Redemption Reserve Account must be equal to the Redeemable Preference Shares redeemed. Similarly, if the redeemable preference shares are redeemed out of the proceeds of fresh issue of shares, the new Share Capital Account raised by fresh issue will take the place of the Redeemable Preference Share Capital Account after the redemption. Thus, in such a case, new Share Capital Account (Equity or Preference) must be equal to the Redeemable Preference Shares redeemed.

If the Redeemable Preference Shares are redeemed partly out of the profits of the company which would otherwise be available for dividend and partly out of the proceeds of fresh issue of shares, the Capital Redemption Reserve Account and the new Share Capital Account (Equity or Preference) taken together will replace the Redeemable Preference Share Capital redeemed. Thus in such a case, Redeemable Preference Share Capital redeemed = Capital Redemption Reserve Account + New Share Capital Account (Equity or Preference).

Nowhere in the above section, the terms "Proceeds of Fresh Issue" has precisely been defined. As such, there is much scope for confusion as to what should constitute the proceeds of fresh issue in various circumstances like issue of shares - (i) at par, or (ii) at a premium, or (iii) at a discount. This point is particularly important where preference shares are redeemed partly out of the profits of the company and partly out of the proceeds of fresh issue of shares to determine the amount not covered by fresh issue for transfer to Capital Redemption Reserve Account.

For this, the following principles should be followed:

- (i) *When fresh issue of shares is made at par:* In such a case, there should not be any confusion. The nominal value of the shares issued will constitute the proceeds and the same should be considered for determining the amount to be credited to Capital Redemption Reserve Account.
- (ii) *When fresh issue of shares is made at a premium:* In such a case, the confusion may arise as to whether the nominal value of the shares issued should constitute the "proceeds" or both the nominal value of the shares issued and the premium money received on those shares should constitute the "proceeds".

Apparently, the question may pose a problem, but a critical analysis of the provisions of the Companies Act, will reveal that the Act, is very much clear on the point. Section 78 of the Companies Act, 1956 clearly states that where a company issues shares at a premium, a sum equal to the aggregate amount of the premium received on those shares be credited to a separate account called "Securities Premium Account" and the provisions relating to

the reduction of capital shall apply if the Securities Premium Account is utilised otherwise than for the purposes specified therein. But Section 78 does not specify redemption of preference for which the Securities Premium Account can be utilised.

It is clear from the above that in such a case, the premium received on issue of shares should be disregarded and only the nominal value of the shares issued should be considered for determining the amount to be credited to Capital Redemption Reserve Account.

- (iii) *When fresh issue of shares is made at a discount:* In such a case, the confusion may arise as to whether the net amount received after deduction of discount from the nominal value of shares issued constitute the proceeds.

Although the Companies Act is not very much clear on this point, for all practical purposes, the net amount received on issue of shares should constitute the proceeds and the same should be considered for determining the amount to be credited to Capital Redemption Reserve Account. Keeping in view the main purpose of Section 80, it can be argued that the nominal value of the shares issued is not represented wholly by tangible assets. The net amount received on such shares actually represents tangible assets while the amount of discount being a capital loss does not represent tangible assets.

**Premium on Redemption:** When preference shares are to be redeemed at a premium, the amount of premium payable on redemption can be provided either out of securities premium account, or from the profit of the company. It means that capital profit could be utilised for premium, if any, payable on redemption of preference shares.

### **Accounting Entries on redemption of Preference Shares**

- (i) *If the redeemable preference shares are redeemed out of the profits of the company which would otherwise be available for dividend -*

1. When profits available for dividend are transferred to Capital Redemption Reserve Account:

General Reserve Account	Dr.	as the case may be
Profit and Loss Appropriation A/c	Dr.	
Dividend Equalisation Account	Dr.	
To Capital Redemption Reserve A/c		with the nominal value of the shares to be redeemed

2. If Current Assets are realised to provide cash for redemption of preference shares:

Bank	Dr.	
To Respective Assets Account		with the realised value of assets

3. On transfer of redeemable preference share capital to be redeemed to Preference Shareholders Account:

Redeemable Preference Share Capital A/c	Dr.	with the nominal value of the shares to be redeemed
To Preference Shareholders A/c		

4. If preference shares are redeemed at premium:

Premium on Redemption of Preference Shares A/c	Dr.	with the amount of premium payable
To Preference Shareholders A/c		

**Note:** Entries Nos. 3 and 4 can be combined.

5. On writing off premium on redemption of preference shares:

Securities Premium Account	Dr.	with the amount of premium paid on redemption of preference shares
or Profit and Loss Appropriation A/c	Dr.	
To Premium on Redemption of Preference Shares Account		

6. On redemption of preference shares:

Preference Shareholders Account	Dr.	with the amount paid
To Bank		

- (ii) *If the Redeemable Preference Shares are redeemed out of the proceeds of a fresh issue of shares made for the purpose of redemption:*

First of all, entries for fresh issue of shares will be passed. The entries 3, 4, 5 and 6 will be passed as given above.

**Note:** In such a case, new Share Capital Account (Preference or Equity) replaces the Redeemable Preference Share Capital Account redeemed.

- (iii) *If the redeemable preference shares are redeemed partly out of the profits of the company which would otherwise be available for dividend and partly out of the proceeds of a fresh issue of shares made for the purpose of redemption:*

Here, all the entries shown under (i) and (ii) have to be passed. But there are certain common entries which can be combined together.

**Note:** In this case, Capital Redemption Account and the new capital account will jointly replace the Redeemable Preference Share Capital Account redeemed.

### Illustration 18

(When preference shares are redeemed out of the profits of the company).

Vanities Ltd. had an issue 1,000, 12% Redeemable Preference Shares of ₹ 100 each, repayable at a premium of 10%. These shares are to be redeemed now out of the accumulated reserves, which are more than the necessary sum required for redemption. Show the necessary entries in the books of the company, assuming that

the premium on redemption of shares has to be written off against the company's Securities Premium Account.

**Solution:**

**Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
General Reserve Account	Dr.	1,00,000	
To Capital Redemption Reserve A/c			1,00,000
(Transfer of reserves to Capital Redemption Reserve Account on Redemption of Redeemable Preference Shares)			
12% Redeemable Preference Share Capital A/c	Dr.	1,00,000	
Premium on Redemption of Preference Shares A/c	Dr.	10,000	
To 12% Preference Shareholders A/c			1,10,000
(Amount payable to 12% preference shareholders on redemption of 12% preference shares at a premium of 10%)			
Securities Premium A/c	Dr.	10,000	
To Premium on Redemption of Preference Share A/c			10,000
(Application of Securities Premium Account to write off premium on Redemption of Preference Shares)			
12% Preference Shareholders A/c	Dr.	1,10,000	
To Bank			1,10,000
(Amount due to 12% preference shareholders on redemption paid)			

**Note:** Capital Redemption Reserve Account replaces the 12% Redeemable Preference Shares Capital Account and the capital structure of the company remains unchanged.

**Illustration 19**

(When redeemable preference shares are redeemed out of the proceeds of fresh issue made for the purpose).

Sure and Fast Ltd. has part of its share capital consists of, 12% Redeemable Preference Shares of ₹ 100 each, repayable at a premium of 5%. The shares have now become ready for redemption. It is decided that the whole amount will be

redeemed out of a fresh issue of 20,000 equity shares of ₹ 10 each at ₹ 11 each. The whole amount is received in cash and the 12% preference shares are redeemed.

Show the necessary journal entries in the books of the company.

**Solution:**

**Journal Entries**

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Bank	Dr. 2,20,000	
To Equity Share Application and Allotment A/c		2,20,000
(Application money on 20,000 equity shares @ ₹ 11 per share including a premium of Re. 1 per share)		
Equity Share Application and Allotment A/c	Dr. 2,20,000	
To Equity Share Capital A/c		2,00,000
To Securities Premium A/c		20,000
(Allotment of 20,000 equity shares ₹ 10 each issued at a premium of ₹ 1 per share as per Board's Resolution dated....)		
12% Redeemable Preference Share Capital A/c	Dr. 2,00,000	
Premium on Redemption of Preference Share A/c	Dr. 10,000	
To 12% Preference Shareholders A/c		2,10,000
(Amount due to 12% preference shareholders on redemption of 8% preference shares at a premium of 5%)		
Securities Premium A/c	Dr. 10,000	
To Premium on Redemption of Preference Shares A/c		10,000
(Application of Securities Premium Account to write off Premium on Redemption of Preference Shares)		
12% Preference Shareholders A/c	Dr. 2,10,000	
To Bank		2,10,000
(Amount due to 12% preference shareholders on redemption paid)		

**Note:** Equity Share Capital Account replaces the 12% Redeemable Preference Share Capital Account and the capital structure of the company remains unchanged).

**Illustration 20**

The following is the balance sheet of Oscar India Ltd. as on 31st March 2011:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Preference share capital: 2,500 shares of ₹ 100 each fully called-up	2,50,000	Fixed assets	6,00,000
Less: Final call @ ₹ 20 per share unpaid	<u>2,000</u> 2,48,000	Investment	50,000
Equity share capital: 30,000 shares of ₹ 10 each fully paid-up	3,00,000	Bank	90,000
Profit and loss A/c	1,50,000		
Securities premium	15,000		
Creditors	<u>27,000</u>		
	7,40,000		<u>7,40,000</u>

On 30th June, 2011, the Board of directors decided to redeem the preference shares at a premium of 10% and to sell the investments at its market price of ₹40,000. They also decided to issue sufficient number of equity shares of ₹ 10 each at a premium of Re. 1 per share, required after utilising the profit and loss account leaving a balance of ₹50,000. Premium on redemption is required to be set off against securities premium account.

Repayments on redemption were made in full except to one shareholder holding 50 shares only due to his leaving India for good.

You are required to show the journal entries and the balance sheet of the company after redemption. Assumption made should be shown in the working.

**Solution:****Journal entries in the books of Oscar Ltd.**

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Bank	Dr. 40,000	
Profit and Loss A/c	Dr. 10,000	
To Investments		50,000
(Being the sale of investments at a loss of ₹ 10,000)		
Bank	Dr. 1,65,000	
To Share Capital A/c		1,50,000
To Securities Premium A/c		15,000
(Being the issue of required number of equity shares at a premium of 10%)		

Preference Share Capital A/c	Dr.	2,40,000	
Premium on Redemption A/c	Dr.	24,000	
To Preference Shareholders A/c			2,64,000
(Being the transfer of the amount due to preference shareholders on redemption)			
<hr/>			
Securities Premium A/c	Dr.	24,000	
To Premium on Redemption A/c			24,000
(Being the transfer of securities premium account to write off premium on redemption account)			
<hr/>			
Profit and Loss A/c	Dr.	90,000	
To Capital Redemption Reserve A/c			90,000
(Being the transfer of profit used for redemption of preference shares transferred to capital redemption reserve account)			
<hr/>			
Preference Shareholders A/c	Dr.	2,58,500	
To Bank			2,58,500
(Being the payment to preference shareholders except for 50 shares)			

**Balance Sheet of Oscar India Ltd. as on 1st July, 2011**

**(After redemption)**

<i>Liabilities</i>		₹	<i>Assets</i>	₹
<i>Pref. Share Capital</i>			Fixed Assets	6,00,000
100 shares of			Bank	36,500
₹ 100 each	10,000			
Less: Calls in arrears	<u>2,000</u>	8,000		
<i>Equity Share Capital</i>				
45,000 shares of ₹ 10 each	4,50,000			
Capital Red. Reserve	90,000			
Profit and Loss A/c	50,000			
Securities Premium	6,000			
<i>Current Liabilities:</i>				
Creditors	27,000			
Pref. Shareholders	<u>5,500</u>			
	6,36,500			<u>6,36,500</u>

**Working Notes:**

1. Calculation of required number of fresh issue of equity shares.

	₹	₹
Profit and Loss A/c Balance		1,50,000
Less: Loss on Sale of Investment	10,000	
Balance required	<u>50,000</u>	60,000
Profit available for redemption		90,000
Amount required for redemption		2,40,000
Amount available from Profit and Loss A/c		90,000
New issue required 15,000 shares		1,50,000

2. **Bank Account**

<i>Dr.</i>		<i>Cr.</i>
<i>Particulars</i>	₹	<i>Particulars</i>
To Balance b/d	90,000	By Preference Share- holders A/c
To Investment	40,000	2,58,500
To Share Capital A/c	1,50,000	By Balance b/d
To Securities Premium A/c	<u>15,000</u>	36,500
	<u>2,95,000</u>	<u>2,95,000</u>

3. Premium on redemption of preference shares has been met out of securities premium account.

**Illustration 21**

(When Redeemable Preference Shares are redeemed partly out of the profits of the company and partly out of the proceeds of fresh issue of shares made for the purpose).

**The Balance Sheet of Producers Ltd. as at 31st March, 2011 is as follows:**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital 40,000 Equity Shares of ₹ 10 each	4,00,000	Plant and Machinery	1,90,000
1,000 8% Preference Shares of ₹ 100 each	<u>1,00,000</u>	Furniture and Fixtures	20,000
	<u>5,00,000</u>	<i>Investments</i>	60,000
Issued and Subscribed Capital:		Current Assets, Loans and <i>Advances:</i>	
25,000 Equity Shares of ₹ 10 each fully paid-up	2,50,000	A. Current Assets:	
1,000, 8% Preference Shares of ₹ 100 each fully paid-up	1,00,000	Stock	1,30,500
		Debtors	49,550
		Cash at Bank	4,950
		<i>B. Loans and Advances:</i>	
		Prepaid expenses	1,000

*Reserves and Surplus:*

Securities Premium Account	9,000
Profit and Loss Account	55,000

*Current Liabilities and Provisions*

## A. Current Liabilities:

Sundry Creditors	22,500
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## B. Provisions:

Provisions for taxation	<u>19,500</u>	
	4,56,000	<u>4,56,000</u>

In order to redeem its preference shares, the company issued 5,000 equity shares of ₹ 10 each at a Premium of 10% and sold its investment of ₹ 70,800. Preference shares were redeemed at a premium of 10%.

Show the necessary journal entries in the books of the company and prepare the balance sheet of the company immediately after redemption of preference shares.

**Solution:****Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Bank	Dr.	55,000	
To Equity Share Application and Allotment Account			55,000
(Application money received on 5,000 equity shares of ₹ 10 at a premium of 10%).			
Equity Share Application and Allotment A/c	Dr.	55,000	
To Equity Share Capital A/c			50,000
To Securities Premium A/c			5,000
(Allotment of 5000 equity shares of ₹ 10 each issued at a premium of 10% as per Board's resolution dated....)			
Profit and Loss A/c	Dr.	50,000	
To Capital Redemption Reserve A/c			50,000
(Transfer of the balance amount of the nominal value preference shares to be redeemed not covered by fresh issue, i.e., ₹ 1,00,000 - ₹ 50,000 on redemption to Capital Redemption Reserve A/c)			

Bank	Dr.	70,800	
To Investments A/c			60,000
To Profit and Loss A/c			10,800
<u>(Sale on Investments at a profit and transfer of profit on sale to Profit and Loss A/c)</u>			
8% Redeemable Preference Share Capital A/c	Dr.	1,00,000	
Premium on Redemption of Preference Shares A/c	Dr.	10,000	
To 8% Preference Shareholders A/c			1,10,000
<u>(Amount due to 8% preference shareholders on redemption)</u>			
Securities Premium A/c	Dr.	10,000	
To Premium on Redemption of Preference Shares A/c			10,000
<u>(Application of securities premium to write off premium on redemption of preference shares)</u>			
8% Preference Shareholders A/c	Dr.	1,10,000	
To Bank			1,10,000
<u>(Amount due to 8% Preference Shareholders on redemption paid)</u>			

**Balance Sheet of Producers Ltd. as at 31st March, 2011  
(After Redemption Preference Shares)**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital- 40,000 Equity Shares of ₹ 10 each	4,00,000	Plant and Machinery	1,90,000
1,000, 8% Preference Shares of ₹ 100 each	<u>1,00,000</u>	Furniture and Fixtures	20,000
	<u>5,00,000</u>	<i>Investments</i>	Nil
Issued and Subscribed Capital:		Current Assets, Loans and <i>Advances:</i>	
30,000 Equity Shares of ₹ 10 each fully paid-up	3,00,000	A. Current Assets:	
		Stock	1,30,500
		Debtors	49,550
		Cash at Bank	20,750
<i>Reserves and Surplus:</i>		B. Loans and Advances	
Capital Redemption		Prepaid Expenses	1,000
Reserve Account	50,000		
Securities Premium Account	4,000		
Profit and Loss Account	15,800		

**Current Liabilities and Provisions:****A. Current Liabilities:**

Sundry Creditors 22,500

**B. Provisions:**

Provisions for Taxation	<u>19,500</u>	
	<u>4,11,800</u>	<u>4,11,800</u>

**Working Notes:**

(i) Dr.	Bank A/c		Cr.
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Balance b/d	4,950	By 8% Preference Shareholders A/c	1,10,000
To Equity Share Application and Allotment A/c	55,000	By Balance c/d	20,750
To Investment A/c	60,000		
To Profit and Loss A/c	<u>10,800</u>		
	1,30,750		<u>1,30,750</u>

(ii)	Securities Premium A/c		
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Premium on Redemption of Preference Shares Account	10,000	By Balance b/d	9,000
To Balance c/d	<u>4,000</u>	By Equity Share Application and Allotment A/c	<u>5,000</u>
	14,000		14,000

(iii)	Profit and Loss A/c		
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>	<i>₹</i>
To Capital Redemption Reserve A/c	50,000	By Balance b/d	55,000
To Balance c/d	<u>15,800</u>	By Bank (Profit on sale of investments)	<u>10,800</u>
	65,800		65,800

**Note:** Equity Share Capital issued at ₹ 50,000 and Capital Redemption Reserve Account ₹ 50,000 jointly replace 8% Redeemable Preference Share Capital ₹ 1,00,000. Hence the capital structure of the company remains unchanged.

**Illustration 22**

(When fresh issue of shares is made at a discount)

**The Balance Sheet of Ultra-Modern Ltd. as at 31st March, 2011 is as follows:**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Share Capital		Fixed Assets:	
Issued and Subscribed Capital:		Land and Building	2,00,000
1,000, 9% Redeemable		Plant and Machinery	60,000
Preference Shares of		Furniture and Fixtures	9,000
₹ 100 each	1,00,000	<i>Current Assets:</i>	
₹ 18,000 Equity Shares of		Stock	60,000
₹ 10 each	1,80,000	Debtors	25,000
Reserves and Surplus:		Investments	54,000
Securities Premium Account	20,000	Bank	42,000
General Reserve Account	60,000		
Profit and Loss Account	40,000		
<i>Current Liabilities:</i>			
Sundry Creditors	50,000		
	4,50,000		4,50,000

The Company decided to redeem its preference shares at a premium of 5% on 1st April, 2011.

A fresh issue of 3,000 equity shares of ₹ 10 each was made at ₹ 9 per share, payable in full on 1st April, 2011. These were fully subscribed and all moneys were duly collected. All the investments were sold for ₹ 50,000 to provide cash for redemption of preference shares. The directors wish that only a minimum reduction should be made in the revenue reserves.

You are required to give the journal entries, including those relating to cash to record the above transactions and to draw up the balance sheet as it would appear after redemption of preference shares.

**Solution:****Journal Entries**

<i>Date</i>	<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
2011			
April 1	Bank	Dr. 27,000	
	To Equity Share Application and Allotment A/c		27,000
	(Receipt of application money on 3,000 equity shares at ₹ 9 per share)		

“	Equity Share Application and Allotment A/c	Dr.	27,000	
	Discount on Issue of Shares A/c	Dr.	3,000	
	To Equity Share Capital A/c			30,000
	(Allotment of 3,000 Equity Shares of ₹ 10 each issued at a discount of Re. 1 per share as per Board's resolution dated....)			
“	Bank	Dr.	50,000	
	Profit and Loss A/c	Dr.	4,000	
	To Investment A/c			54,000
	(Sale of investment at a loss and transfer of loss on sale to profit and loss account)			
“	Profit and Loss Appropriation A/c	Dr.	36,000	
	General Reserve A/c	Dr.	37,000	
	To Capital Redemption Reserve A/c			73,000
	(Transfer of the balance amount of the nominal value of preference shares to be redeemed not covered by fresh issue, i.e., ₹ 1,00,000 - ₹ 27,000 on redemption to Capital Redemption Reserve Account)			
“	9% Redeemable of Preference Share Capital A/c	Dr.	1,00,000	
	Premium on Redemption of Preference Shares A/c	Dr.	5,000	
	To 9% Preference Shareholders A/c			1,05,000
	(Amount due to 9% preference shareholders on redemption)			
“	Securities Premium A/c	Dr.	5,000	
	To Premium on Redemption of Preference Shares A/c			5,000
	(Application of Securities Premium Account to write off Premium on Redemption Preference Shares Account)			
“	9% Preference Shareholders A/c	Dr.	1,05,000	
	To Bank			1,05,000
	(Amount due to 9% preference shareholders on redemption paid)			

“ General Reserve A/c Dr. 3,000  
 To Discount on Issue of Shares 3,000  
 (Discount on issue of shares being  
 written off)

**Balance Sheet of Ultra-Modern Ltd. as at 1st April, 2011  
 (After Redemption of Preference Shares)**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital	?	Land and Building	2,00,000
Issued, Subscribed and Paid-up capital		Plant and Machinery	60,000
21,000 Equity Shares of ₹ 10 each fully paid-up	2,10,000	Furniture and Fixtures	9,000
		Current Assets, Loans and <i>Advances</i>	
<i>Reserves and Surplus:</i>		<i>A. Current Assets:</i>	
Capital Redemption		Stock	60,000
Reserve Account	73,000	Debtors	25,000
Securities Premium Account	15,000	Bank	14,000
General Reserve	23,000	<i>B. Loans and Advances</i>	Nil
<i>Current Liabilities:</i>		<i>Miscellaneous Expenditure</i>	
Sundry Creditors	50,000	Discount on Issue of Shares	3,000
	<u>3,71,000</u>		<u>3,71,000</u>

**Working Notes:**

(i) *Dr.*

<b>Bank Account</b>		<i>Cr.</i>	
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d	42,000	By 9% Preference Share- holders A/c	1,05,000
To Equity Share Application and Allotment A/c	27,000	By Balance c/d	14,000
To Investment A/c	<u>50,000</u>		
	1,19,000		<u>1,19,000</u>

(ii)

<b>Profit and Loss Account</b>			
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Investment A/c	4,000	By Balance b/d	40,000
To Capital Redemption Reserve A/c	<u>36,000</u>		
	40,000		<u>40,000</u>

(iii) **General Reserve Account**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Capital Redemption Reserve Account	37,000	By Balance b/d	60,000
To Balance c/d	<u>23,000</u>		
	60,000		<u>60,000</u>

(iv) **Securities Premium A/c**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Premium on Redemption of Preference Shares A/c	5,000	By Balance b/d	20,000
To Balance c/d	<u>15,000</u>		
	20,000		<u>20,000</u>

**Note:** (1) Proceeds of fresh issue of equity shares ₹ 27,000 and Capital Redemption Reserve Account ₹73,000 jointly replace 9% Redeemable Preference Share Capital Account ₹1,00,000. Hence Capital Structure of the company remains unchanged.

(2) Discount on issue of shares amounting to ₹ 3,000 has been written off against Securities Premium Account.

**Illustration 23**

**Following is the balance sheet of Kalpataru Construction Ltd. as on 31st March, 2011.**

<i>Liabilities</i>	₹	₹
20,000 12% preference shares of ₹ 50 each fully called-up	10,00,000	
Less: Calls unpaid (₹ 10 per share)	<u>20,000</u>	9,80,000
1,00,000 equity shares of ₹ 10 each; ₹ 7.50 per share called-up	7,50,000	
Less: Calls unpaid	<u>7,500</u>	7,42,500
Securities premium		50,000
General Reserve		6,00,000
Calls in advance (final call on equity shares)		<u>2,500</u>
		<u>23,75,000</u>
<b>Assets:</b>		
Fixed assets		12,25,000
Investment		2,00,000
Cash and bank balance		<u>9,50,000</u>
		<u>23,75,000</u>

On 1st April, 2011 the Board of directors decide that:

- (a) The fully paid preference shares are to be redeemed at a premium of 5% in May, 2011 and for that purpose 50,000 equity shares of ₹ 10 each are to be issued at par in the month of April, 2011.
- (b) The 1,000 equity shares owned by A an existing shareholder, who has failed to pay the allotment money and the 1st call money @ 2.50 each share are to be forfeited in the month of June, 2011.
- (c) The final call of ₹ 2.50 per share is to be made in the month of July, 2011.

All the above are duly complied with according to the time schedule. The amount due on the issue of fresh equity shares and on final call are also duly received except from B who had failed to pay the 1st call money for his 1,000 shares holding, has again failed to pay the final call also. These shares of B have been forfeited, in the month of August, 2011. On the total shares forfeited, 1,500 shares are sold to X in September, 2011 credited as fully paid for ₹ 9 per share, the whole of A's shares being included.

Show the necessary journal entries and prepare the balance sheet of the company as on 30th September, 2011.

**Solution:**

**Journal Entries in the books of Kalpataru Construction Ltd.**

<i>Date</i>	<i>Particulars</i>		<i>Dr.( ₹)</i>	<i>Cr.( ₹)</i>
2011				
April 1	Bank	Dr.	5,00,000	
	To Equity Share Capital A/c			5,00,000
	(Issue of equity shares)			
May	Securities Premium A/c	Dr.	45,000	
	To Premium on Redemption of Preference Shares			45,000
	(Premium on redemption shares transferred)			
May	General Reserve A/c	Dr.	4,00,000	
	To Capital Redemption Reserve A/c			4,00,000
	(Transfer of the required amount from general reserve account)			
May	Preference Share Capital A/c	Dr.	9,00,000	
	Premium on Redemption of Preference Share A/c	Dr.	45,000	
	To Preference Shareholders A/c			9,45,000
	(The amount payable)			

			₹	₹
May	Preference Shareholders A/c To Bank (Amount paid)	Dr.	9,45,000	9,45,000
June	Equity Share Capital A/c To Shares Forfeited A/c To Calls in Arrear A/c (A's Shares forfeited)	Dr.	7,500	2,500 5,000
July	Equity Share Final Calls A/c To Equity Share Capital A/c (Amount due on final call i.e. 99,000 shares x ₹ 2.50)	Dr.	2,47,500	2,47,500
July	Bank Calls in Arrear A/c Calls in Advance A/c To Equity Share Final Call A/c (Amount received)	Dr. Dr. Dr.	2,42,500 2,500 2,500	2,47,500
Aug.	Equity Share Capital A/c To Shares Forfeited A/c To Calls in Arrear A/c (B's shares forfeited)	Dr.	10,000	5,000 5,000
Sept.	Bank Share Forfeited A/c To Equity Share Capital A/c (1,500 shares re-issued @ ₹ 9)	Dr. Dr.	13,500 1,500	15,000
Sept.	Share Forfeited A/c To Capital Reserve A/c (Profit on reissue of forfeited shares)	Dr.	3,500	3,500

Dr.	<b>Shares Forfeited Account</b>		Cr.
Particulars	₹	Particulars	₹
To Equity Share Capital A/c	1,500	By Equity Share Capital A/c (A's shares)	2,500
To Capital Reserve A/c (Balancing figure)	3,500	By Equity Share Capital A/c (B's shares)	5,000
To Balance c/d (500 Shares @ ₹ 5)	<u>2,500</u>		
	7,500		<u>7,500</u>

**Bank Account**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Balance b/d	9,50,000	By Pref. Shareholders	9,45,000
To Equity Share Capital A/c	5,00,000	By Balance c/d	7,61,000
To Equity Share Final Call A/c	2,42,500		
To Equity Share Capital A/c	<u>13,500</u>		
	17,06,000		<u>17,06,000</u>

**Balance Sheet of Kalpataru Construction Ltd.  
as on 30th September, 2011**

<i>Liabilities:</i>		₹
		₹
2,000 Preference Shares @ ₹ 50 fully called up	1,00,000	
Less: Calls unpaid	<u>20,000</u>	80,000
1,49,500 Equity Shares @ ₹ 10	14,95,000	
Add: Shares Forfeited Account	<u>2,500</u>	14,97,500
Capital Reserve		3,500
Capital Redemption Reserve		4,00,000
Securities Premium Account		5,000
General Reserve		<u>2,00,000</u>
		<u>21,86,000</u>
<i>Assets:</i>		
Fixed Assets		12,25,000
Investment		2,00,000
Cash and Bank Balance		<u>7,61,000</u>
		<u>21,86,000</u>

**23. RIGHTS ISSUE**

Section 81 of the Companies Act, 1956, provides that where a public company proposes to increase its subscribed capital at any time after the expiry of two years of its formation or at any time after the expiry of one year from the first allotment of shares whichever is earlier, by allotment of further shares, then:

- (a) such further shares must be offered to the holders of the equity shares of the company in proportion to the capital paid-up on those shares at the date of offer;
- (b) the offer aforesaid must be made by notice specifying the number of shares offered and limiting a time not being less than 15 days from the date of the offer within which the offer, if not accepted, will be deemed to have been declined;
- (c) unless the Articles of the company otherwise provide, the offer aforesaid shall be deemed to include a right exercisable by the person concerned to

renounce the shares offered to him or any of them in favour of another person; and the notice shall contain a statement of this right; and

- (d) after the expiry of the time specified in the notice aforesaid or on receipt of earlier intimation from the person to whom such notice is given that he declines to accept the shares offered, the Board of directors may dispose them of in such a manner as they are most beneficial to the company.

Thus, a company is under legal obligation to offer first the further issue of shares to its existing equity shareholders unless the company has resolved otherwise by a special resolution. But the holders are not liable to necessarily accept the offer so made. They have the option of rejection or renunciation. This right is called rights issue; the right itself generally carries a market value in the case of prosperous companies.

There is specific advantage of this legal right to the existing shareholders specially when the market price of the share is more than the issue price. If the company is prosperous and the market value of its shares is high, the right to buy more shares is really valuable. The demand for the shares of such a company will be considerable and as a consequence the market price of the existing shares will be above their issue price. The moment a „right issue’ is made, the quotation of the existing shares tend to go up. The right itself can also be disposed of and the person who buys the right will be entitled to purchase the fresh shares offered by the company.

If the Directors wish not to make a rights issue, that is they wish that the fresh issue of shares should be offered to the public at large or to some special set of people or institutions, the company must pass a special resolution to this effect at a general meeting. If the resolution fails to obtain three-fourths majority but obtains simple majority, the Central Government may be approached to sanction the issue as other than a rights issue. The Central Government has power to give such a sanction.

The value of the right is calculated with reference to the market value of the shares and following steps may be taken:

1. The market value of the shares held by a shareholder has to be ascertained.
2. The price of the new share which is required to be paid to the company has to be added with the market value of the shares held to ascertain the total price of all the shares.
3. The average price of one share has to be ascertained by dividing the total price of all the shares by the number of shares.
4. The value of the right will be the difference between the market value and the average price of the share.

#### **Illustration 24**

A company has decided to increase its existing share capital by making rights issue to the existing shareholders in the proportion of one new share for every two old shares held. You are required to calculate the value of the right if the market value of share at the time of announcement of right issue is ₹ 240. The company has decided to give one share of ₹ 100 each at a premium of ₹ 20 each.

**Solution:**

Market value of 2 shares already held by a shareholder - $2 \times ₹ 240$	₹ 480
Add: The price required to be paid for acquiring one more share	<u>120</u>
Total price of 3 shares	<u>600</u>

$$\text{Average price of one share} = 600/3 = ₹ 200$$

$$\text{Value of right} = \text{Market Value} - \text{Average Price}$$

$$= (₹ 240 - ₹ 200) = ₹ 40$$

An alternative formula is:

$$\frac{\text{New Shares}}{\text{Total Shares}} \times \text{Cum rights price} - \text{New issue price}$$

Accordingly:

$$\frac{1}{3} \times (240 - 120) = ₹ 40$$

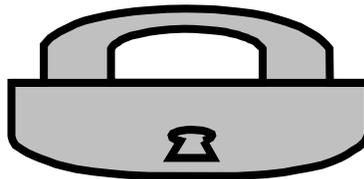
*Proof:* Suppose a person wants to hold three shares in the company. He can buy two existing shares @ ₹ 240 each and then he can get one additional share from the company for ₹ 120 he will spend ₹ 600 in all for the three shares, i.e., ₹ 200 per share. Alternatively, the rights attached to each existing shares enables one to buy 1/2 new share; for buying one new share, two rights are required and for buying three shares one needs six rights which will cost ₹ 240 in all, one must pay ₹ 360 to the company for the three additional shares making a total of ₹ 600 in all or ₹ 200 per share.

**LESSON ROUND UP**

- Accounting records should be prepared to enable the company to ascertain and know : the liabilities and assets of the company, the cost of goods sold or purchased and value of stock, the sales made and profit earned, the expenditure incurred and the losses incurred during the year.
- There are two basic types of share capital which can be issued by a company under the Companies Act, 1956 i.e. (a) preference shares and (b) equity shares.
- Preference shares are those which carry preferential rights as to the payment of dividend at a fixed rate; and the return of capital on winding up of the company.
- An equity share is one which is not a preference share. Equity shares are normally risk bearing shares.

- Balance sheet of a company can be categorized as: Nominal or Authorised Capital; Issued Capital; Subscribed Capital; Called up Capital and Paid-up Capital.
- Shares of a company may be issued at par; at premium and at discount.
- When the number of shares applied for exceeds the number of shares issued, the shares are said to be over-subscribed, in which case some applications may be rejected; of some applications are accepted in full; and allotment is made to the remaining applicants on pro-rata basis.
- When shares are issued at a price higher than the face value, they are said to be issued at a premium.
- When shares are issued at a price lower than the face value, they are said to be issued at discount.
- A company may allot fully paid shares to promoters or any other party for the services rendered by them without payment which is known as issue of shares for consideration other than cash.
- Forfeiture of shares may be said to be the compulsory termination of membership by way of penalty for non-payment of allotment and/or any call money.
- The forfeited shares may be re-issued at par, at a premium or even at a discount. If forfeited shares are re-issued at a discount, the amount of discount can, in no case, exceed the amount credited to Shares Forfeited Account.
- As per Section 77A of the Companies Act, 1956 states that a company may purchase its own shares or other specified securities out of its free reserves, and the proceeds of any shares or other specified securities.
- According to Section 80 of the Companies Act, a company limited by shares may, if authorised by its articles, issue preference shares, which are, or at the option of the company are liable to be redeemed.
- A company is under legal obligation to offer first the further issue of shares to its existing equity shareholders but the holders are not liable to necessarily accept the offer so made. This right is called rights issue.

### SELF TEST QUESTIONS



1. A company issued 10,000 shares of ₹ 10 each. Total applications were for 12,000 shares; allotment was made pro-rata. Application money was ₹ 2 per share and allotment money ₹ 3 per share. Rao failed to pay the allotment money on his 300 shares. How much is due from Rao for allotment?  
  
[Ans.: ₹ 780]
2. A company issues 10,000 shares of ₹ 10 each @ a premium of ₹ 2 per share, payable as: on application ₹ 4 (including premium), on allotment ₹ 3 and the

balance on calls. 8,000 shares were applied for. Which of the following entries is correct for application money:

(a) Bank	Dr.	32,000	
To Share Application A/c			16,000
To Securities Premium A/c			16,000
(b) Bank	Dr.	32,000	
To Share Application A/c			32,000

[Ans.: (b)]

3. A company offers two shares for every five held to its shareholders. The issue price is ₹ 14 and the rights price in the market is ₹ 19. What is the market value of a right?  
[Ans.: ₹ 1.43]

4. The authorised capital of a company is 1,00,000 shares of ₹ 10 each. On April 10, 2011, 50,000 shares are issued for subscription at a premium of ₹ 2 per share. The share money is payable as follows : ₹ 5 (including the premium of ₹ 2) with application, ₹ 3 on allotment; ₹ 2 on first call and ₹ 2 on second call. The subscription list closes on May 11, 2011 and directors proceed to allotment on May 18, 2011. The shares are fully subscribed and the application money (including the premium) is received in full. The allotment money is received by June 30, 2011, except as regards 500 shares. It is expected that the allotment money on these 500 shares will not be received. The first call and second call money is received by September 30, 2011 and December 31, 2011 respectively, barring the second call money on 200 shares which is not received and which is not likely to be received.

Show the Cash Book and the structure of the share capital in the Balance Sheet.

5. X Ltd. forfeited 100 shares of ₹ 10 each for non-payment of the final call of ₹ 2; the shares were re-issued @ ₹ 9 per share. How much was credited to shares forfeited account and what amount was transferred to capital reserve?  
[Ans.: ₹ 800; ₹ 700]

6. Y Ltd. forfeited 100 shares of ₹ 10 each for non-payment of the first call of ₹ 2 and final call of ₹ 3. Of these 60 shares were re-issued @ ₹ 8 per share. Arising from this, which new accounts remain and what balances do they show?

[Ans.: Shares Forfeited A/c: ₹ 200 (Cr.); and  
Capital Reserve A/c: ₹ 180 (Cr.)]

7. Z Ltd. forfeited 150 shares of ₹ 10, issued at a premium of ₹ 2, for non-payment of the final call of ₹ 3. Of these 100 shares were re-issued @ ₹ 11 per share. How much is transferred to capital reserve?

[Ans.: ₹ 700]

8. S Ltd. had issued equity shares of ₹ 10 each at a discount of 6%. 200 of these shares had been forfeited for non-payment of the first and final call of ₹ 2 each; 150 of these shares were later re-issued @ ₹ 9 per share. Indicate

the balance in the Share Forfeited Account and the Capital Reserve Account, resulting from the above.

[Ans.: Shares Forfeited A/c: ₹ 370 (Cr.);  
Capital Reserve: ₹ 1,050 (Cr.)]

9. E Ltd. had allotted 10,000 shares to applicants for 14,000 shares on a *pro rata* basis. The amount payable was ₹ 2 on application, ₹ 5 on allotment (including premium of ₹ 2 each), ₹ 3 on first call and ₹ 2 on final call. Vazir failed to pay the first call and final call on his 300 shares. All the shares were forfeited and out of these 200 shares were re-issued @ ₹ 9 per share. What is the amount credited to capital reserve? [Ans.: ₹ 1,200]
10. (a) Redemption of 10,000 preference shares of ₹ 100 each was carried out by utilisation of reserves and by issue of 4,000 equity shares of ₹ 100 each at ₹ 125. How much should be credited to capital redemption reserve account? [Ans.: ₹ 6,00,000]
- (b) In the above case, the redemption was carried out of reserves and out of the issue of 4,000 shares of ₹ 100 each @ ₹ 95. What is the amount of capital redemption reserve account that is required? [Ans.: ₹ 6,20,000]
11. A company having free reserves of ₹ 30,000 wants to redeem rupees one lakh preference shares. Calculate the face value of fresh issue of shares of ₹ 10 each to be made at a premium of 10%. [Ans.: ₹ 70,000]
12. Bhalla and Co. Ltd. has an authorised equity capital of ₹ 20 lakhs divided into shares of ₹ 100 each. The paid-up capital was ₹ 12,50,000. Besides this, the company had 9% Preference Shares of ₹ 10 each for ₹ 2,50,000. Balance on other accounts were - Securities Premium ₹ 18,000; Profit and Loss Account ₹ 72,000 and General Reserve ₹ 3,40,000. Included in Sundry Assets were investments of the face value of ₹ 30,000 carried in the books at a cost of ₹ 34,000.

The company decided to redeem the Preference Shares at 10% premium, partly by the issue of equity shares of the face value of ₹ 1,20,000 at a premium of 10%. Investments were sold at 105% of their face value. All preference shareholders were paid off except 3 holding 250 shares.

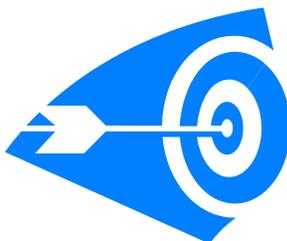
Give the necessary journal entries bearing in mind that the Directors wanted a minimum reduction in free reserves, while effecting the above transactions. Working should form part of your answer.

[Ans.: Amount paid to preference shareholders: ₹ 2,72,250]

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STUDY III  
**ISSUE AND REDEMPTION OF DEBENTURES**

**LEARNING OBJECTIVES**



After studying this Study Lesson you will be able to:

- Identify the ways of issuing debentures.
- Understand the terms of issue of debentures.
- Explain the treatment of interest of debenture.
- State the different modes of writing of discount/loss on issue of debentures.
- Explain the different methods of redemption of debentures.
- Understand the treatment of purchase of debentures in the open market.
- Treatment of interest on own debentures.
- Explain the concept of cum-interest and ex-interest quotations.
- Understand the accounting treatment of conversion of debentures into shares.

### **1. LOAN CAPITAL**

Besides raising capital by the issue of shares, a company may supplement its capital by borrowings. Such borrowings may take the form of both short-term and long-term borrowings. Short-term borrowings by way of promissory notes, bills of exchange, bank overdrafts, cash credits, public deposits, etc., are needed by a company to provide for its working capital while long-term borrowings by way of loan on mortgage of property, term loans from financial institutions, public deposits for a long period, issue of debentures, etc., are needed by a company for financing expenditure of a capital nature. Loan Capital of a company refers to the long-term borrowings of which issue of debentures is the most important and common method adopted by companies. Debentures are part of loan capital and the company is liable to pay interest thereon whether it earns profit or not.

### **2. ISSUE OF DEBENTURES**

Subject to the restrictions imposed by Section 293 of the Companies Act, 1956, a company can issue debentures. The procedure for issuing debentures by a company is very much similar to that of an issue of shares. Applications for debentures are invited from the public through the prospectus and the applicants are asked to pay the application money along with the applications. The company may ask for payment of the whole of the amount along with the application or by instalments.

Like shares, debentures may also be issued either, (i) at par, or (ii) at a premium, or (iii) at a discount without any legal restriction.

Again debentures may be issued by a company in the following ways:

- (1) for cash,
- (2) for consideration other than cash, and
- (3) as collateral security.

### 3. DEBENTURES ISSUED FOR CASH

When debentures are issued for cash the amount to be collected on them may be payable in lump sum or in instalments. Where payable in instalments, debenture application account is opened on receipt of applications. Debenture allotment account and debenture calls account are credited as against debenture account.

### 4. ISSUE OF DEBENTURES AT PAR

Debentures are said to be issued at par when the debentureholder is required to pay an amount equal to the nominal or face value of the debentures e.g. the issue of ₹1,000 debenture for ₹1,000.

*(a) If the full amount is payable along with the application*

(1) On receipt of application money:

Bank	Dr.	with the money received on application
To Debentures Application and Allotment A/c		

(2) On allotment:

Debenture Application and Allotment A/c	Dr.	with the money received on debentures allotted
*To Debentures A/c		

*(b) If the amount is payable in instalments*

1. On receipt of application money:

Bank	Dr.	with the money received on application
To Debentures Application A/c		

\*\*2. On Allotment:

Debenture Application A/c	Dr.	with the application money and allotment money due on debentures allotted
Debenture Allotment A/c	Dr.	
To Debentures A/c		

3. On receipt of allotment money:

Bank	Dr.	with the money received on allotment
To Debenture Allotment A/c		

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\* It is customary to prefix the rate of interest payable on debentures with the debenture account.

\*\* Shown by way of combined journal entry.

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4. On making calls:

Debenture Calls A/c Dr. with the money due on respective  
To Debenture A/c calls

5. On receipt of call money:

Bank Dr. with the money received on  
To Debenture Calls A/c respective calls

**Note:** All cash transactions are generally passed through the Cash Book.

*Case of Over-subscription:* Like shares, the company cannot allot more debentures than issued. The excess application money may be retained by the company against the allotment money due. But the excess application money received on debentures rejected has to be refunded to the applicants. For, this, the accounting entry will be as follows:

Debenture Application A/c Dr. with the excess application money  
To Bank refunded

**Illustration 1**

X Ltd. made an issue of 10,000 12% Debentures of ₹100 each, payable as follows:

- ₹25 on Application
- ₹25 on Allotment
- ₹50 on First and Final Call.

Applications were received for 12,000 debentures and the directors allotted 10,000 debentures rejecting an application for 2,000 debentures. The money received on application for 2,000 debentures rejected was duly refunded. All the calls were made and the moneys duly received.

Show the necessary Cash Book and Journal Entries to record the above transactions and prepare the Balance Sheet of the company.

**Solution:**

**Cash Book (Bank Column)**

Dr.		Cr.
Particulars	₹	Particulars
To 12% Debenture Application A/c (Receipt of application money for 12,000 debentures @ ₹25 per debenture)	3,00,000	By 12% Debenture Application A/c (Refund of application money on an application for 2,000 debentures @ ₹25)
To 12% Debenture Allotment A/c	2,50,000	By Balance c/d
		10,00,000

(Receipt of allotment money on 10,000 debentures @ ₹ 25 per debenture)		
To 12% Debenture First and Final Call A/c	5,00,000	
(Receipt of first and final call money on 10,000 debentures @ ₹ 50 per debenture)		
	<u>10,50,000</u>	<u>10,50,000</u>

#### Journal Entries

Particulars	Dr.( ₹)	Cr.( ₹)
12% Debenture Application A/c	Dr. 2,50,000	
12% Debenture Allotment A/c	Dr. 2,50,000	
To 12% Debentures A/c		5,00,000
(Allotment of 10,000, 12% Debentures of ₹100 each and the allotment money due @ ₹25 per debenture as per Board's resolution dated...)		
12% Debenture First and Final Call A/c	Dr. 5,00,000	
To 12% Debentures A/c		5,00,000
(First and Final Call money due on 10,000, 12% Debentures @ ₹50 per debenture as per Board's resolution dated...)		

#### Balance Sheet of X Ltd. as at...

Liabilities	₹	Assets	₹
Secured Loan:		Current Assets, Loans and Advances	
6% Debentures	10,00,000	A. Current Assets	
		Cash at Bank	<u>10,00,000</u>
	<u>10,00,000</u>		<u>10,00,000</u>

#### 5. ISSUE OF DEBENTURES AT PREMIUM

If the debentures are issued at a price higher than the nominal value of the debentures, the debentures are said to be issued at a premium. The excess of issue price over the nominal value is regarded as the premium amount.

In such a case, the Debentures Account should be credited only with the nominal

value of the debentures and the premium should be credited to "Securities Premium Account". The accounting entry will be as follows:

Debenture Application A/c	Dr.	with the money due on application
Debenture Allotment A/c	Dr.	and allotment including premium
To Debentures A/c		with the nominal value of the debentures
To Securities Premium A/c		with the premium money received on debentures

### Illustration 2

B Ltd. issued 2,000, 13% Debentures of ₹100 each at ₹110 payable as follows:

On Application	₹ 25
On Allotment	₹ 35 (including premium)
On First and Final Call	₹ 50

The debentures were fully subscribed and the moneys were duly received.

Show the necessary Cash Book and the Journal entries and prepare the Balance Sheet of the company.

### Solution:

#### Cash Book (Bank Column)

<i>Dr.</i>		<i>Cr.</i>
<i>Particulars</i>	<i>₹</i>	<i>Particulars</i>
		<i>₹</i>
To 13% Debenture Application A/c	50,000	By Balance c/d
(Application money on 2,000 debentures @ ₹25 each)		2,20,000
To 13% Debenture Allotment A/c	70,000	
(Allotment money on 2,000 debentures @ ₹35 each including premium of ₹10 each)		
To 13% Debenture First and Final Call A/c	1,00,000	
(First and final call money on 2,000 debentures @ ₹50 each)		
	<u>2,20,000</u>	<u>2,20,000</u>

**Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
13% Debenture Application A/c	Dr.	50,000	
13% Debenture Allotment A/c	Dr.	70,000	
To 13% Debentures A/c			1,00,000
To Securities Premium A/c			20,000
(Allotment of 2,000, 13% Debentures of ₹100 each issued at a premium of ₹10 each and the allotment money due @ ₹35 per debenture on 2,000 debentures including the premium of ₹10 per debenture as per Board's resolution dated...)			
13% Debenture First and Final Call A/c	Dr.	1,00,000	
To 13% Debentures A/c			1,00,000
(First and final call money due on 2,000 debentures @ ₹50 per debenture as per Board's resolution dated...)			

**Balance Sheet of B Ltd. as at...**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Reserve and Surplus:		Current Assets, Loans	
Securities premium	20,000	and Advances	
Secured Loans:		Current Assets	
6% Debentures	<u>2,00,000</u>	Cash at Bank	<u>2,20,000</u>
	<u>2,20,000</u>		<u>2,20,000</u>

**6. ISSUE OF DEBENTURES AT DISCOUNT**

If the debentures are issued at a price lower than the nominal value of the debentures, the debentures are said to be issued at a discount. The difference between the nominal value and the issue price is regarded as the discount.

The Companies Act, 1956, does not prescribe any restriction on issue of debentures at a discount. Such discount on issue of debentures may either be written off against revenue profit or capital profits of the company.

When debentures are issued at a discount the Debentures Account should be credited with the nominal value of the debentures and the discount allowed on issue of debentures, being a capital loss, should be debited to "Discount on Issue of Debentures Account". Thus, the accounting entry will be as follows:

Debenture Application A/c	Dr.	with the money due on application
Debenture Allotment A/c	Dr.	with the money due on allotment



Discount on Issue of Debentures A/c	Dr.	10,000	
To 14% Debentures A/c			1,00,000
(Allotment of 2,000 14% debentures of ₹100 each issued at a discount of 5% and allotment money due on 2,000 debentures @ ₹20 per debenture as per Board's resolution dated.....)			
14% Debenture First and Final Call A/c	Dr.	1,00,000	
To 14% Debentures A/c			1,00,000
(First and final call money due on 2,000 debentures @ ₹50 per debentures as per Board's resolution dated.....)			
Profit and Loss A/c	Dr.	10,000	
To Discount on Issue of Debentures A/c			10,000
(Discount of issue of debentures being written off against the profit and loss account)			

**Balance Sheet of W Ltd. as at.....**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Secured Loans:</i>		<i>Current Assets, Loans</i>	
14% Debentures	2,00,000	<i>and Advances</i>	
		<i>Current Assets</i>	
		Cash at Bank	1,90,000
		<i>Miscellaneous Expenditure</i>	
		Discount on issue of	
		Debentures	<u>10,000</u>
	<u>2,00,000</u>		<u>2,00,000</u>

**7. DEBENTURES ISSUED FOR CONSIDERATION OTHER THAN CASH**

It may so happen that the company acquires some assets from the vendor and instead of paying the vendor in cash, the company may allot debentures in payment of purchase consideration. The issue of debentures to vendors is known as issue of debentures for consideration other than cash. In such a case, the accounting entries will be as follows:

(1) For acquisition of assets:

Sundry Assets (Individually) A/c	Dr.	(with the value of assets)
To Vendors		(with the purchase price)

**Notes:** (i) If the value of debentures allotted is more than the agreed purchase price, the difference is debited to Goodwill Account.

(ii) Similarly, if the value of debentures allotted is less than the agreed purchase price, credited to Capital Reserve Account.

(2) (a) On allotment of debentures (at par)

Vendors Dr. (with the value of debentures)  
To Debentures A/c

(b) On allotment of debentures (at premium)

Vendors A/c Dr. (with the purchase price)  
To Debentures A/c (with the nominal value)  
To Securities Premium A/c (with the amount of premium)

(c) On allotment of debentures (at discount)

Vendors A/c Dr. (with the amount of purchase)  
Discount on Issue of Debentures A/c Dr. (with the amount of discount)  
To Debentures A/c (with the nominal value)

#### Illustration 4

Optimist Ltd. purchased building worth ₹1,20,000 and plant and machinery worth ₹1,00,000 from Depressed Ltd. for an agreed purchase consideration of ₹2,00,000 to be satisfied by the issue of 2,000, 12% Debentures of ₹100 each.

Show the necessary journal entries in the books of Optimist Ltd.

#### Solution:

#### Journal

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Building A/c	Dr.	1,20,000	
Plant and Machinery A/c	Dr.	1,00,000	
To Depressed Ltd.			2,00,000
To Capital Reserve A/c			20,000
(Purchase of sundry assets and transfer of capital profits as per agreement with the vendor dated...)			
Depressed Ltd.	Dr.	2,00,000	
To 12% Debentures A/c			2,00,000
(Being 2,000, 12% Debentures of ₹100 each allotted to vendors for consideration other than cash as per Board's resolution dated...)			

### 8. DEBENTURES ISSUED AS COLLATERAL SECURITY

The term „Collateral Security’ implies additional security given for a loan. Where a company obtains a loan from a bank or insurance company, it may issue its own debentures to the lender as collateral security against the loan in addition to any other security that may be offered. In such a case, the lender has the absolute right over the debentures until and unless the loan is repaid. On repayment of the loan,

however, the lender is legally bound to release the debentures forthwith. But in case the loan is not repaid by the company on the due date or in the event of any other breach of agreement, the lender has the right to retain these debentures and to realise them. The holder of such debentures is entitled to interest only on the amount of loan, but not on the debentures. Such an issue of debentures is known as “Debentures issued as Collateral Security”.

Section 121 of the Companies Act, 1956 allows such an issue of debentures and provides that where a company has deposited any of its debentures to secure advances from time to time on current account or otherwise, the debentures shall not be deemed to have been redeemed by reason only on the account of the company having ceased to be in debt whilst the debentures remained so deposited. As such, a reference has to be made in such a case, on the Balance Sheet although no liability exists against the company.

*Accounting Entries:* The following are the two alternative ways by which debentures issued as collateral security can be dealt with:

(1) No accounting entry is required to be shown in the books of account at the time of issue of such debentures for the simple reason that the loan against which the debentures are issued as collateral security has already been credited, the debit being given to Bank. But the existence of such debentures issued as collateral security has to be mentioned by way of a note on the Balance Sheet under the specific loan account.

(2) If it is desired that such an issue of debentures as collateral security is to be recorded in the books of account, the accounting entries will be as follows:

(i) *On issue of debentures as collateral security*

Debentures Suspense A/c	Dr.	with the nominal value of the
To Debentures A/c		debentures issued

In this case, Debentures Suspense Account will appear on the asset side of the balance sheet under the heading Miscellaneous Expenditure. Debentures Account will appear as a liability on the liabilities side of the Balance Sheet.

(ii) *On repayment of the loan and release of debentures*

Debentures A/c	Dr.	with the nominal value of the
To Debentures Suspense A/c		debentures released

**Note:** The net effect of the above two entries is nil. Both the Debentures Suspense Account and the Debentures Account are cancelled on repayment of the loan. As such, this method is rarely followed in practice.

### Illustration 5

Z Ltd. secured an overdraft of ₹50,000 from the bank by issuing 600, 12% Debentures of ₹100 each as collateral security. Prepare the Balance Sheet of the Company.

**Solution (First Method):****Balance Sheet of Z Ltd. as at...**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Secured Loan:</i>			
Bank Overdraft	50,000		
(Secured by the issue of 600, 12% Debentures of ₹100 each as collateral security)			

**Solution (Second Method):****Journal Entries**

		<i>Dr.</i>	<i>Cr.</i>
		₹	₹
Debentures Suspense A/c	Dr.	60,000	
To Debentures A/c			60,000
(Issue of 600, 12% Debentures of ₹100 each as collateral security for a bank overdraft of ₹50,000 as per Board's resolution dated.....)			

**Balance Sheet of Z Ltd. as at.....**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Secured Loans:</i>		<i>Miscellaneous Expenditure</i>	
600, 12% Debentures of ₹100 each	60,000	Debentures Suspense Account	60,000
(issued as collateral security as per contra)		(issued as collateral security as per contra)	
Bank Overdraft	50,000		
(Secured by the issue of 600, 12% Debentures of ₹100 each as collateral security)			

**9. TERMS OF ISSUE OF DEBENTURES**

A company may issue debentures on any specific condition as to its redemption. The following possibilities are underway. The accounting treatments are also given below:

*(i) Issued at par and redeemable at par:*

Bank	Dr.	(with the nominal value of debentures)
To Debentures Account		

*(ii) Issued at discount redeemable at par:*

Bank	Dr.	(with the amount received)
Discount on Issue of Debentures Account	Dr.	(with the amount of discount)
To Debentures Account		(with the nominal value)

*(iii) Issued at premium redeemable at par:*

Bank Account	Dr.	(with the amount received)
To Debentures Account		(with the nominal value)
To Securities Premium Account		(with the amount of premium)

*(iv) Issued at par redeemable at premium:*

Bank Account	Dr.	(with the amount received)
Loss on issue of Debentures Account	Dr.	(with the amount of premium on redemption)
To Debentures Account		(with the nominal value)
To Premium on Redemption of Debentures Account		(with the premium on redemption)

*(v) Issued at discount, but redeemable at premium*

Bank Account	Dr.	(with the amount received)
Discount on Issue of Debentures Account	Dr.	(with the discount allowed on issue)
Loss on Issue of Debentures Account	Dr.	(with the premium payable on redemption)
To Debentures Account		(with the nominal value)
To Premium on Redemption of Debentures Account		(with the premium on redemption)

*Alternatively*

Bank Account	Dr.	(with the amount received)
Loss on Issue of Debentures Account	Dr.	(with the discount on issue and premium on redemption)
To Debenture Account		(with the nominal value)
To Premium on Redemption of Debentures Account		(with the premium payable at the time of redemption)

**Note :** (i) Premium on Redemption of Debentures Account is shown as liabilities side of the balance sheet.

(ii) Loss on Issue of Debentures Account is written off gradually every year during the life of the debentures. The unwritten off amount is shown in the balance sheet under „Miscellaneous Expenditure’.

(iii) Premium on Redemption of Debentures Account is transferred to debentureholders account at the time of redemption.

**Illustration 6**

ABC Company Ltd., proposes to issue 10,000, 14% debentures of ₹100 each to its shareholders on right basis. They give you the following terms of issue and ask you to pass the journal entries in every case separately:

- (i) The debentures were issued at premium of 10% and redeemable at par.
- (ii) The debentures were issued at discount of 5% and redeemable at premium of 10%.
- (iii) The debentures were issued at par but redeemable at premium of 10%.
- (iv) The debentures were issued at premium of 5% but repayable at premium of 10%.
- (v) The debentures were issued at discount of 5% but redeemable at par.

**Solution:****Journal Entries**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
(i)	Bank Account To 14% Debentures To Securities Premium Account (Being the issue of debentures at premium of 10% but repayable at par)	Dr. 11,00,000	10,00,000 1,00,000
(ii)	Bank Account Loss on Issue of Debentures To 14% Debentures To Premium on Redemption of Debentures A/c (Being the issue of debentures at discount of 5% but repayable at premium of 10%)	Dr. 9,50,000 Dr. 1,50,000	10,00,000 1,00,000
(iii)	Bank Account Loss on Issue of Debentures To 14% Debentures To Premium on Redemption of Debentures A/c (Being the issue of debentures at par but redeemable at premium of 10%)	Dr. 10,00,000 Dr. 1,00,000	10,00,000 1,00,000
(iv)	Bank Account Loss on Issue of Debentures Account To 14% Debentures	Dr. 10,50,000 Dr. 50,000	10,00,000

	To Premium on Redemption of Debentures A/c		1,00,000
	(Being the issue of debentures at premium of 5% but repayable at premium of 10%)		
(v)	Bank Account	Dr.	9,50,000
	Discount on Issue of Debentures Account	Dr.	50,000
	To 14% Debentures		10,00,000
	(Being the issue of debentures at discount of 5% but repayable at par)		

## 10. INTEREST ON DEBENTURES

Wherever a company issues debentures it undertakes to pay interest thereon at a fixed percentage. As the debentures acknowledge a debt, the payment of interest on the debt is obligatory on the part of the company issuing them irrespective of the fact whether the company earns profit or not. Thus, interest payable on debentures is a charge against the profits of the company. Interest on debentures is normally payable half-yearly and it is calculated at the fixed percentage on the nominal value of debentures issued and not on the issue price. Thus, the issue of debentures at par or at a premium or at a discount would not make any difference for the purpose of calculating interest on debentures. But, the effective rate of interest on the amount paid by the debentureholders would invariably differ in each of the above cases.

According to Income-tax Act, 1961 a company is liable to deduct income-tax at the prescribed rate from the gross amount of interest payable on debentures before the actual payment is made to the debentureholders and to deposit it with the Government. The balance amount after deduction of income-tax is actually payable to the debentureholders. This is known as deduction of tax at source.

It is important to note in this connection that if the debentures are tax-free, the income-tax on such interest will be paid by the company itself on behalf of the debentureholders. However, the interest paid by the company has to be grossed up for calculating the interest expense of the company.

*Accounting Entries:* The following entries are required to be shown in the books of the company to deal with interest on debentures:

### 1. On interest becoming due

Debenture Interest A/c	Dr.	with the gross interest due
To Income-tax Payable A/c		with the amount of Income-tax to be deducted at source
To Debentureholders' A/c		with the net amount payable after deduction of income-tax

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\* Students are advised to refer the relevant Finance Act for the rate of tax deducted at source applicable to different classes of assesseees.



	To Debentureholders A/c			9,000
	(Interest due on ₹2,00,000, 10% debentures for 6 months and income-tax deducted at source thereon @ 10%)			
"	Debentureholders' A/c	Dr.	9,000	
	To Bank			9,000
	(Payment of interest to debentureholders)			
"	Income-tax Payable A/c	Dr.	1,000	
	To Bank			1,000
	(Deposit of income-tax deducted at source from Debenture Interest with the Government)			
2011			₹	₹
Mar. 31	Debenture Interest A/c	Dr.	10,000	
	To Income-tax Payable A/c			1,000
	To Debentureholders A/c			9,000
	(Interest due on ₹2,00,000, 10% debentures for 6 months and income-tax deducted at source thereon @ 10%)			
"	Debentureholders' A/c	Dr.	9,000	
	To Bank			9,000
	(Payment of interest to debentureholders)			
"	Income-tax Payable A/c	Dr.	1,000	
	To Bank			1,000
	(Deposit of Income-tax deducted at source from Debenture Interest with the Government)			
"	Profit and Loss A/c	Dr.	20,000	
	To Debenture Interest A/c			20,000
	(Transfer of Debenture Interest to Profit and Loss A/c)			

*Interest Accrued and Due (Outstanding):* As stated above, interest on debentures is usually paid every six months; interest really becomes due when the six months are over and not earlier; in other words no one can demand that the company pay interest before the due date. Suppose a company has issued 13.5% Debentures for ₹10,00,000 interest is payable on 30th September and 31st March. The company will pay ₹67,500 in every six months. Suppose, the company closes its books on 31st

March, the interest due on that date may be unpaid. In that case, there will be a liability which will be recorded by the entry:

Debenture Interest A/c	Dr.	₹ 67,500	
To Debenture Interest Outstanding			₹ 67,500

The liability will be shown in the Balance Sheet along with debentures.

**Interest Accrued but not Due:** On the closing date interest for the full period must be brought into books but, it is possible, that due date for payment of interest has not yet come. Suppose, in the example given above, the company closes its books on 31st December. Interest upto 30th September must have been paid but that upto 31st March is not yet due. For proper accounting, however, interest from 1st October to 31st December (3 months) must be taken into account. Interest for such a period is termed as „Interest accrued but not due’. The entry for recording this interest is:

Debenture Interest A/c	Dr.	₹ 33,750	
To Debenture Interest Accrued but not Due			₹ 33,750

Debenture Interest Accrued but not Due is shown in the balance sheet under Other Current Liabilities.

## 11. WRITING OFF THE DISCOUNT ON ISSUE OF DEBENTURES

Discount on issue of debentures is a capital loss of the company and it is required to be shown on the assets side of the Balance Sheet under the heading “Miscellaneous Expenditure” until written off. Although, there is no legal obligation on the part of the company to write off such a loss, sound business policy demands that it should be written off as quickly as possible.

Discount on issue of debentures can be treated in any of the following two ways:

1. Discount on issue of debentures being a capital loss, can be written off against capital profits. Section 78 also permits Securities Premium Account to be utilised in writing off discount on issue of debentures.
2. Discount on issue of debentures can be treated as deferred revenue expenditure and written off against revenue over the period of life of the debentures.

In case there is no capital profit and it is decided to treat discount on issue of debentures as deferred revenue expenditure, it is desirable to write it off against revenue over the period of life of the debentures on an equitable basis. The following are the two methods which are generally adopted for this purpose.

1. *Fixed Instalment Method:* Under this method, the total amount of discount allowed on issue of debentures is spread over the life of the debentures equally and every year a fixed amount is written off against revenue. For example, if the total discount allowed on issue of debentures is ₹10,000 and the debentures are issued for 10 years, the amount of discount to be written off every year will be 1/10th of the total discount, i.e., every year an amount equal to  $(1/10 \times 10,000) = 1,000$  will be written off over a period of 10 years. At the end of the 10th year Discount on Issue of Debentures Account would be completely written off. This method is simple and can

be applied only if the debentures are redeemed at the expiry of the period. This method has the advantage of spreading the burden of discount equally over the period of the debentures.

2. *Fluctuating Instalment Method:* Where debentures are redeemed by annual drawings, the first method is not suitable for the simple reason that the burden of discount is equally spread over the period of life of the debentures. Under this method, the amount of discount to be written off every year should bear a proportion to the debentures outstanding at the beginning of each year. Thus, the amount of discount to be written off every year under this method cannot be fixed and will go on diminishing every year, i.e., the burden of discount will be in proportion to the benefits derived out of the debentures. The initial year should bear a greater burden of discount than the subsequent years as each subsequent year has the use of a lesser amount of debentures. Let us take an example as follows:

Nu Look Ltd. issued 1,000, 12% Debentures of ₹100 each at a discount of 10%. The terms of issue provided the repayment of the debentures at par by annual drawing of ₹20,000 over a period of 5 years. How should the amount of discount to be written off be determined?

The total discount on issue of debentures is ₹10,000. This total discount of ₹10,000 has to be written off in proportion to the debentures outstanding at the beginning of each year. Thus, outstanding balance ratio will be as follows:

1st year	...	...	=	₹ 1,00,000
2nd Year	₹(1,00,000 - 20,000)		=	₹ 80,000
3rd Year	₹(80,000 - 20,000)		=	₹ 60,000
4th Year	₹(60,000 - 20,000)		=	₹ 40,000
5th Year	₹(40,000 - 20,000)		=	₹ 20,000

Outstanding balance ratio = 1,00,000 : 80,000 : 60,000 : 40,000 : 20,000  
= 5 : 4 : 3 : 2 : 1

Therefore, amount of discount to be written off every year will be as follows:

1st Year	=	₹10,000 x 5/15	=	₹ 3,333
2nd Year	=	₹10,000 x 4/15	=	₹ 2,667
3rd Year	=	₹10,000 x 3/15	=	₹ 2,000
4th Year	=	₹10,000 x 2/15	=	₹ 1,333
5th Year	=	₹10,000 x 1/15	=	₹ 667
			Total	₹ 10,000

*Accounting Entries:* Every year, when the discount on issue of debentures is written off against revenue, the following entry is required to be shown in the books of the company:

Profit and Loss A/c	Dr.	with the amount written off
To Discount on Issue of Debentures A/c		

**Illustration 8**

Indra Ltd. issued 10,000 debentures of ₹100 each at a discount of 6%. The expenses on issue amounted to ₹35,000. The debentures have to be redeemed at the rate of ₹1,00,000 each year commencing with end of fifth year. How much discount and expenses should be written off each year?

**Solution:**

Total amount of discount and expenses is ₹95,000.

It should be written off each year according to the ratios of the amounts outstanding.

Years	Ratio
1	10
2	10
3	10
4	10
5	10
6	9
7	8
8	7
9	6
10	5
11	4
12	3
13	2
14	<u>1</u>
Total of ratios	= <u>95</u>

In each of the first five years, discount to be written off will be

$$\frac{₹95,000 \times 10}{95} = ₹10,000$$

$$\text{In 6th year} = \frac{₹95,000 \times 9}{95} = ₹9,000$$

$$\text{In 7th year} = \frac{₹95,000 \times 8}{95} = ₹8,000$$

$$\text{In 8th year} = \frac{₹95,000 \times 7}{95} = ₹7,000$$

$$\text{In 9th year} = \frac{₹95,000 \times 6}{95} = ₹6,000$$

$$\text{In 10th year} = \frac{₹95,000 \times 5}{95} = ₹5,000$$

$$\text{In 11th year} = \frac{₹95,000 \times 4}{95} = ₹4,000$$

$$\text{In 12th year} = \frac{\text{₹}95,000 \times 3}{95} = \text{₹}3,000$$

$$\text{In 13th year} = \frac{\text{₹}95,000 \times 2}{95} = \text{₹}2,000$$

$$\text{In 14th year} = \frac{\text{₹}95,000 \times 1}{95} = \text{₹}1,000$$

## 12. LOSS ON ISSUE OF DEBENTURES

If a company issues debentures at par or at a discount which are redeemable at a premium, the premium payable on redemption of the debentures should also be treated as capital loss and as such it should be dealt within the same manner as Discount on Issue of Debentures.

Redemption of debentures at a premium is a known loss at the time of issue of debentures as the terms of issue generally contain such provisions for redemption. As such, it would be prudent on the part of the company to write off such loss during the life time of the debentures. The loss to be incurred by a company for a particular issue of debentures is ascertained in the following manner:

- (i) If the debentures are issued at par and redeemable at a premium, the loss will be equal to the amount of premium payable on redemption.
- (ii) if the debentures are issued at a discount and redeemable at a premium, the loss will be equal to the total of the amount of discount on issue and the amount of premium on redemption. Thus, total loss = Discount on issue of Debentures + Premium Payable on redemption of debentures. In such a case, there is no need to debit Discount on Issue of Debenture Account. Instead, "Loss on Issue of Debentures Account" should be debited with total loss.

When debentures are redeemable at a premium the liability for premium payable on redemption is recorded in the books at the time of issue of the debentures although the actual liability will arise only at the time of redemption. The main advantage derived by the company is that the loss on issue of debentures is completely written off before the debentures are due for redemption.

*Accounting Entries:* The following accounting entries are required to be shown in the books of the company:

### 1. On issue of debentures:

Bank A/c	Dr.	with the amount received on issue of debentures
Loss on Issue of Debentures A/c	Dr.	with the amount of total loss to be incurred
To Debentures A/c		with the nominal value of the debentures issued
To Premium on Redemption of Debentures A/c		with the amount of Premium payable on redemption



3rd yr. (at the beginning)	To Balance b/d	6,000	3rd yr. (at the end)	By Profit and Loss A/c	2,000
		<u>6,000</u>		" Balance c/d	<u>4,000</u>
					<u>6,000</u>
4th yr. (at the beginning)	To Balance b/d	4,000	4th yr. (at the end)	By Profit and Loss A/c	2,000
		<u>4,000</u>		" Balance c/d	<u>2,000</u>
					<u>4,000</u>
5th yr. (at the beginning)	To Balance b/d	2,000	5th yr. (at the end)	By Profit and Loss A/c	2,000
		<u>2,000</u>			<u>2,000</u>

**Illustration 10**

(Writing off the discount on issue of debentures when debentures are redeemable by annual drawings).

Bee Ltd. issued 2,000, 12% Debentures of ₹ 100 each at a discount of 6% on 1.4.2008 repayable by equal annual drawings in four years.

You are required to show the Discount on Issue of Debentures Account over the period.

**Solution:**

Total amount of discount on issue of debentures:

$$= ₹ 2,00,000 \times 6/100 = ₹ 12,000$$

This total discount of ₹ 12,000 has to be written off in proportion to the debentures outstanding at the beginning of each year. Thus, outstanding balance ratio will be as follows:

1.4.2008		= ₹	2,00,000
1.4.2009	= ₹ (2,00,000 - 50,000)	= ₹	1,50,000
1.4.2010	= ₹ (1,50,000 - 50,000)	= ₹	1,00,000
1.4.2011	= ₹ (1,00,000 - 50,000)	= ₹	50,000

$$\begin{aligned} \text{Outstanding balance ratio} &= 2,00,000 : 1,50,000 : 1,00,000 : 50,000 \\ &= 4 : 3 : 2 : 1 \end{aligned}$$

Therefore, amount of discount to be written off every year will be as follows:

31.3.2009	= ₹ 12,000 x 4/10	= ₹	4,800
31.3.2010	= ₹ 12,000 x 3/10	= ₹	3,600
31.3.2011	= ₹ 12,000 x 2/10	= ₹	2,400
31.3.2012	= ₹ 12,000 x 1/10	= ₹	<u>1,200</u>
		Total	<u>₹ 12,000</u>

**Discount on Issue of Debentures A/c**

<i>Dr.</i>			<i>Cr.</i>		
<i>Date</i>	<i>Particulars</i>	<i>₹.</i>	<i>Date</i>	<i>Particulars</i>	<i>₹.</i>
1.4.2008	To 6% Debentures A/c	<u>12,000</u> 12,000	31.3.2009	By Profit and Loss A/c	4,800
			"	" Balance c/d	<u>7,200</u> 12,000
1.4.2009	To Balance b/d	7,200 <u>7,200</u>	31.3.2010	By Profit and Loss A/c	3,600
			"	" Balance c/d	<u>3,600</u> 7,200
1.4.2010	To Balance b/d	3,600 <u>3,600</u>	31.3.2011	By Profit and Loss A/c	2,400
			"	" Balance c/d	<u>1,200</u> 3,600
1.4.2011	To Balance b/d	<u>1,200</u> 1,200	31.3.2012	By Profit and Loss A/c	1,200
				" Balance c/d	<u>1,200</u>

**Illustration 11**

(Writing off the Loss on Issue of Debentures where the debentures are issued at a discount and redeemable at a premium).

Venus Ltd. issued 1,000, 12% Debentures of ₹100 each at a discount of 5%. These debentures are redeemable at a premium of 10% after 5 years.

You are required to show:

- (i) the journal entry on Issue of the Debentures; and
- (ii) the Loss on Issue of Debentures Account over the period.

**Solution:****Journal**

<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Bank A/c	Dr.	95,000	
Loss on Issue of Debentures A/c	Dr.	15,000	
To 12% Debentures A/c			1,00,000
To Premium on Redemption of Debentures A/c			10,000

(Allotment of 1,000, 12% debentures of ₹100 each issued at a discount of 5% and redeemable at a premium of 10% after 5 years as per Board's resolution dated...)

**Note:** Total loss on issue of debentures has been arrived at as follows:

$$\begin{aligned} \text{Loss on issue of debentures} &= \text{Discount on issue} + \text{Premium on redemption} \\ &= ₹(5,000 + 10,000) = ₹15,000 \end{aligned}$$

This total loss of ₹15,000 has to be written off over a period of 5 years.

Therefore, every year  $1/5$  of ₹15,000 = ₹3,000 have to be written off.

#### Loss on Issue of Debentures A/c

Dr.	Loss on Issue of Debentures A/c				Cr.
Date	Particulars	₹	Date	Particulars	₹
1st yr. (at the begin- ning)	To 12% Deben- tures A/c To Premium on Redemption A/c	5,000 <u>10,000</u> 15,000	1st yr. (at the end)	By Profit and Loss A/c " Balance c/d	3,000 12,000 <u>15,000</u>
2nd yr. (at the beginning)	To Balance b/d	12,000 <u>12,000</u> ₹	2nd yr. (at the end)	By Profit and Loss A/c " Balance c/d	3,000 9,000 <u>12,000</u> ₹
3rd yr. (at the beginning)	To Balance b/d	9,000 <u>9,000</u>	3rd yr. (at the end)	By Profit and Loss A/c " Balance c/d	3,000 6,000 <u>9,000</u>
4th yr. (at the beginning)	To Balance b/d	6,000 <u>6,000</u>	4th yr. (at the end)	By Profit and Loss A/c " Balance c/d	3,000 3,000 <u>6,000</u>
5th yr. (at the beginning)	To Balance b/d	3,000 <u>3,000</u>	5th yr. (at the end)	By Profit and Loss A/c	3,000 <u>3,000</u>

### 13. REDEMPTION OF DEBENTURES

Redemption of debentures refers to the discharge of the liability in respect of the debentures issued by a company. Debentures can be redeemed at any time either at par or at a premium or at a discount without any legal formalities to be complied with. The prospectus inviting applications for the debentures generally contains terms of redemption of the debentures. But irredeemable debentures are perpetual in nature and cannot be redeemed except on the happening of a contingency.

Section 121 of the Companies Act, 1956 provides that where a company has redeemed any debentures previously issued, it has the right to re-issue them either

by issuing the same debentures or by issuing other debentures, unless the articles contain any provision to the contrary or the intentions is shown by passing a resolution or by some other act that the debentures shall be cancelled. Upon such re-issue the debentureholders will enjoy the same rights and priorities as if the debentures had never been redeemed.

#### **14. MOBILISATION OF FUNDS FOR REDEMPTION OF DEBENTURES**

If no provision is made for mobilising additional funds required for the redemption of the debentures, the company may find great difficulty in discharging the liability when the debentures become due for payment. When the debentures become due for payment, the company may not have sufficient cash to discharge the liability. Even if it is assumed the liquid position of the company would permit such redemption, the working capital and consequently the profits of the company would be adversely affected if a large sum of money is withdrawn from the business at a time.

In order to overcome the above difficulties the following courses of actions are open to the company for mobilising the additional funds required at the time of redemption:

1. *Utilising a part of the profits of the company:* A part of the profits may be withheld and utilised by the company for the purpose of redemption of the debentures. Here again, the company is having the following options:

- (a) The amount of profits withheld by the company may be retained in the business itself as owned capital in the form of General Reserve.
- (b) The amount of profits withheld by the company may be withdrawn from the business and the same may be invested either (i) in readily convertible securities or (ii) in taking out an insurance policy to provide funds when needed.

2. *Raising the capital:* In order to provide for additional funds required for the redemption of the debentures, the company may issue new shares or debentures for the purpose. Old debentures will be redeemed out of the proceeds of fresh issue and the new share capital or debentures will take the place of the old debentures.

3. *Disposing of the assets of the company:* Additional funds required for the redemption of debentures may also be provided by the company by disposing of some of its fixed assets.

#### **15. METHODS OF REDEMPTION OF DEBENTURES**

Following are the methods of redeeming the debentures:

##### **(a) By annual drawings**

Under this method, a certain portion of the total debentures is redeemed every year over the life-time of the debentures and thus at the end of the life time of the debentures, the debentures are fully redeemed. Which debenture should be paid in which year usually depends on the drawings. What is actually done is that slips

bearing the number of debentures are mixed up and put into a drum and then as many slips as the debentures to be redeemed are taken out of the drum at random. This procedure is known as "Drawing by lot". The amount of debentures to be redeemed every year is generally calculated by dividing the total amount of the debentures by the number of years for which they have been issued. In such a case, the amount of annual drawings will be equal. But the amount of annual drawings may also be unequal in some cases.

When debentures are redeemed by annual drawings, the amount of annual drawings should be transferred to General Reserve Account out of the profits of the company and the same need not be invested in any other way.

**(b) By payment in one lump sum at the expiry of a specified period**

Under this method the entire amount of the debenture debt is paid to the debentureholders in one lump sum at the expiry of a specified period, i.e., at maturity or at the option of the company at a date within such specified period according to the terms of issue.

As the amount involved is large and the date of which debentures have to be redeemed is known to the company well in advance, it is possible for the company to make necessary arrangement to provide for the additional funds required for the debentures from the very beginning. In such a case, the best method is to set aside every year throughout the life of the debentures a part of the profits of the company which would otherwise be available for dividend and to invest the same in readily convertible securities together with compound interests at a fixed rate will amount to the sum required to pay off the debentures at the specified date.

The investments, thus made, are sold when the debentures become due for payment. This method ensures the availability of sufficient cash for the redemption of debentures when they become due and is known as "Sinking Fund method".

**(c) By purchase of debentures in the open market**

Under this method, a company may purchase its own debentures in the open market if it seems to be convenient and profitable to the company. When the market price of the debentures goes down below par or debentures are quoted at a discount on the stock exchange, the company usually takes the opportunity to buy the debentures in the open market and to cancel them. Own debentures may, also, be purchased by the company for its own investment when it is desired to keep the debentures alive with a view to issuing them in future. The law does not prohibit a company from purchasing its own debentures unless the terms of issue specify otherwise.

In such a case, the purchase of debentures can be made out of the amount realised on sale of investments where sinking funds exists. Where there is no sinking fund, the debentures can be purchased out of the company's cash balance.

**(d) By conversion into shares**

A company may issue convertible debentures giving option to the debentureholders to exchange their debentures for equity shares or preference

shares in the company. The debentureholders are given the right on certain dates or before a specified date to exchange the debentures for the shares. A certain number of shares are offered for each debenture. When the debenture-holders exercise this option and the company issues the shares, it is referred as redemption by conversion.

## **16. PROTECTION OF THE INTEREST OF THE DEBENTUREHOLDERS**

According to Section 117C of the Companies Act, where a company issues debentures, it should create a debenture redemption reserve account for the redemption of such debentures to which adequate amount shall be credited out of its profits every year, until such debentures are redeemed. The amount credited to the debenture redemption reserve account cannot be utilised by the company for any other purpose.

The Securities and Exchange Board of India has also issued comprehensive guidelines to protect the interest of the debentureholders in the context of redemption of debentures. SEBI has made it obligatory for all companies raising resources through debentures to create a Debenture Redemption Reserve equivalent to 50% of the amount of debenture issued before the company intends to redeem the debentures.

When a company has created a sinking fund of the equivalent amount of debenture issue, it means that there is no need to create Debenture Redemption Reserve. However no redemption can begin unless Sinking Fund accumulates a sum of 50% of the amount of debenture issue. When the debentures are redeemed, a sum equivalent to the amount of debentures redeemed shall be transferred to General Reserve Account for disclosure to investors because sinking fund itself will substitute for DRR. Debenture Redemption Reserve is not required in case of convertible debentures i.e., conversion of debentures into either shares or new debentures.

## **17. REDEMPTION OF DEBENTURES OUT OF PROFIT**

The company withholds a part of divisible profits for redeeming the debentures. The amount of profit is reduced to the extent of the debentures to be redeemed and hence not available for distribution by way of dividends among the shareholders. The payment to debentureholders in such a case is out of profit earned in the course of the business and therefore it is termed as redemption out of profits. Thus the existing liquid resources are not affected by redemption in this method.

There are two options available to the company in regard:

(A) The amount of divisible profits withheld by the company may be retained in the business itself as a source of internal financing i.e. in the form of general reserve and no investment is made outside to provide cash for redemption. In such a case the following journal entries are passed.

(1) *On debentures becoming due for payment*

Debentures A/c	Dr.	(with the nominal value)
----------------	-----	--------------------------

Premium on Redemption of Debentures A/c	Dr.	(with the amount of premium, if any)
To Debentureholders A/c		(with the amount paid)

*(2) On redemption*

Debentureholders A/c	Dr.	(with the amount paid)
To Bank		

*(3) On transfer of Profit to General Reserve*

Debenture Redemption Reserve	Dr.	
Profit and Loss Appropriation A/c	Dr.	(with the nominal value of debentures redeemed)
To General Reserve		

**Note:** According to the SEBI Guidelines, there must be a Debenture Redemption Reserve Account with a credit balance of 50% of the nominal value of the debenture issue before the commencement of redemption. Hence only 50% of the debentures can be redeemed out of profits if the redemption is done in one lump sum on the maturity date. It is suggested that the companies intending to redeem debentures out of profits must appropriate, the profits for Debenture Redemption Reserve Account before redemption. However, drawal from Debenture Redemption Reserve is permissible after 10% of the debenture liability has been actually redeemed by the company. The balance in Debenture Redemption Reserve Account must be transferred to General Reserve on redemption of all the debentures.

(B) The amount of divisible profits withheld from distribution as dividend may be invested either in (i) readily marketable securities or (ii) taking out insurance policy to provide funds when required. In either case, the profit set aside will be accumulated in an account styled as Debenture Redemption Fund or Sinking Fund.

**(a) Debenture Redemption Fund/Sinking Fund Method**

The Accounting entries in such a case will be as follows:

First Year (At the end)

**(1) On transfer of profits to Debenture Redemption Fund Account -**

Profit and Loss Appropriation A/c	Dr.	with the annual amount set aside out of profit*
To Debenture Redemption Fund A/c		

**(2) On investment of the amount of the profit set aside in readily marketable securities -**

Debenture Redemption Fund Investments A/c	Dr.	with the amount invested
To Bank		

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\* This amount will be ascertained with the help of Sinking Fund Tables.

Debenture Redemption Fund Investment Account will appear on the Assets side of the Balance Sheet while Debenture Redemption Fund Account will appear on the Liabilities side of the Balance Sheet, substituting Profit and Loss Appropriation Account partly, under the head "Reserves and Surplus".

Second and subsequent years over the life of the Debentures excepting the last year (At the end) -

(1) On receipt of interest on Debenture Redemption Fund Investment -

Bank	Dr.	with the amount of interest received
To Interest on Debenture Redemption Fund Investments A/c		on investment

(2) On Transfer of the interest to Debenture Redemption Fund -

Interest on Debenture Redemption Fund Investments A/c	Dr.	with the amount of interest received
To Debenture Redemption Fund A/c		on investments

(3) On Transfer of Profits to Debenture Redemption Fund Account -

Profit and Loss Appropriation A/c	Dr.	with the annual amount of profit set
To Debenture Redemption Fund A/c		aside

(4) On investment of annual profit and interest received on investment -

Debenture Redemption Fund Investments A/c	Dr.	with the total amount of profit set
To Bank		aside plus interest received on investments

In the last year when the debentures become due for redemption (at the end)-

(1) On receipt of interest on Debenture Redemption Fund Investment -

Bank	Dr.	with the amount of interest received
To Interest on Debenture Redemption Fund Investments A/c		on investment

(2) On transfer of the interest -

Interest on Debenture Redemption Fund Investments A/c	Dr.	with the amount of interest received
To Debenture Redemption Fund A/c		on investments

(3) On transfer of profits to Debenture Redemption Fund A/c -

Profits and Loss Appropriation A/c	Dr.	with the amount of annual profit set
To Debenture Redemption Fund A/c		aside

(4) On realisation of Investments made so as to provide cash for the redemption -

Bank	Dr.	with the realised value of
To Debenture Redemption Fund Investments A/c		investments

(5) If there is any profit or loss on sale of investments, the same has also to be transferred to Debenture Redemption Fund Account -

(a) *In case of profit* -

Debenture Redemption Fund		
Investments A/c	Dr.	with the amount of profit
To Debenture Redemption Fund A/c		

(b) *In case of loss* -

Debenture Redemption Fund A/c	Dr.	with the amount of loss
To Debenture Redemption Fund		
Investments A/c		

(6) On transfer of Debentures to Debentureholders Account for payment to be made -

Debentures A/c	Dr.	with the nominal value of the debentures
To Debentureholders A/c		

(7) If debentures are redeemable at premium -

Premium on Redemption of Debentures A/c	Dr.	with the amount of premium on redemption
To Debentureholders A/c		

(8) On Payment -

Debentureholders A/c	Dr.	with the amount paid
To Bank		

(9) On transfer of Premium on Redemption of Debentures to Debenture Redemption Fund Account (In case Premium on Redemption of Debentures Account is not opened at the time of issue of debentures) -

Debenture Redemption Fund A/c	Dr.	with the amount of premium
To Premium on Redemption of Debentures A/c		

(10) On transfer of Loss of Issue of Debentures Account to Debenture Redemption Fund Account (In case the loss on Issue of Debentures Account is not yet written off) -

Debenture Redemption Fund A/c	Dr.	
To Loss of Issue of Debentures A/c		

**N.B.:** Either entry (9) or entry (10) may be passed depending upon the circumstances.

(11) On transfer of Debenture Redemption Fund Account balance to General Reserve -

Debenture Redemption Fund A/c	Dr.	with the balance left
To General Reserve A/c		

**Notes:**

- (1) No investment should be made in the last year for the simple reason that payment have to be made to the Debentureholders in the last year by realising the investments. Therefore, there is no logic behind making investment in the last year and then immediately realising the same.
- (2) If the Debentures are redeemable at a premium, the total amount to be accumulated in Debenture Redemption Fund Account must include the amount of premium.
- (3) This method assumes the availability of profits and sufficient cash investments.
- (4) Sometimes, it may so happen that Sinking Fund may be non-cumulative. In such a case, the interest received on investments should not be credited to the Sinking Fund nor should it be invested. Instead, interest should be treated as interest earned as on general investment and credited to Profit and Loss Account.
- (5) The balance in the Debenture Redemption Fund is transferred to General Reserve Account after the redemption of debentures.
- (6) While transferring the balance of debenture redemption fund to general reserve, the profit on cancellation of debentures and profit on sale of investments transferred to debenture redemption fund account should be eliminated and the same should be transferred to capital reserve.
- (7) Where only a part of the debentures are redeemed, it must be ensured that the balance in sinking fund is equal to 50% of the amount of debenture issue on the date of redemption.
- (8) According to SEBI guidelines, creation of debenture redemption reserve equivalent to 50% of the debenture issue is obligatory. However, a company may create more reserve if it so desires, this being justified by the creation of sinking fund.

*Sinking Fund to Replace an Asset and to Repay a Liability* - The sinking fund is created to provide the cash on the known date for two specific purposes (a) to replace an asset and (b) to redeem debentures (liability).

Though in practice the sinking funds for redemption of a liability and that for replacement of an asset operate in a similar manner yet there are some differences as stated below:

- (i) The annual instalment set aside for sinking fund for the replacement of an asset is really depreciation and is a charge against profit and therefore it is debited to profit and loss account. On the other hand, in case of sinking fund created for redemption of a liability, the annual instalment is an appropriation of profit and debited to profit and loss appropriation account since the purpose is to accumulate profits and not to distribute dividends until the liability is repaid.
- (ii) At the end of the estimated useful life of the assets, the sinking fund investments are sold to replace the old asset. The ultimate balance in sinking

fund account then is utilised to write off the book value of the old asset requiring replacement. The sinking fund is therefore extinguished. In the other case, the sale proceeds of the investments would be utilised to discharge the liability involving the closure of liability account and sinking fund investment account. The balance in the sinking fund account is transferred to general reserve. It is in the nature of free reserves and which can be used to pay dividends at the discretion of the company.

### **(b) Insurance Policy Method**

Under this method also, profits are set aside and credited to Debenture Redemption Fund Account in the same manner as it is done in case of Sinking Fund Method. But instead of investing the amount of profit set aside in readily convertible securities an Insurance Policy is taken out for the required sum and an amount equal to the profit set aside is paid as premium. Thus, at the maturity of the policy, the required cash would be available for carrying out redemption of debentures. This method differs from the Sinking Fund Method in respect of interest on investment. Unlike Sinking Fund Method, interest will not be received every year but will accrue at a fixed rate. The total amount of premium will always be less than the amount of policy. Thus, the difference between the policy amount and the total amount of premium paid on the policy is the total amount of interest that accrues on the premiums paid. The main advantage of this method is that the policy is not subscribed to any fluctuation in prices unlike securities in the Sinking Fund Method and as such the exact sum insured will be available at maturity. However, the following disadvantages may be accounted for:

- (i) the annual rate of interest is lower than that obtainable from investments; and
- (ii) if the policy is cancelled on account of non-payment of premium, the surrender value will be very much less than the amount which has been paid by way of annual premiums.

The accounting entries will be as follows:

All the years till the maturity of the policy (including the last year) -

(1) On payment of premium at the beginning of the year -

Debenture Redemption Fund

Policy A/c	Dr.	with the amount of annual
To Bank		premium

(2) On transfer of profit to Debenture Redemption Fund Account at the end of the year -

Profit and Loss Appropriation A/c	Dr.	with the amount of profit set
To Debenture Redemption Fund A/c		aside

In the last year on maturity of the policy.

In addition to the above two entries, the following entries are also required on maturity of the policy at the end of the last year.

(3) On realisation of the policy amount from the Insurance Company -

Bank	Dr.	with the amount of the
To Debenture Redemption Fund Policy A/c		policy

(4) On transfer of accrued interest (i.e. the difference between the policy amount and the total premium paid) to Debenture Redemption Fund Account -

Debenture Redemption Fund Policy A/c	Dr.	with the difference between
To Debenture Redemption Fund A/c		the policy amount and the total premium paid

(5) On transfer of Debentures Account to Debentureholders' Account for payment to be made –

Debentures A/c	Dr.	with the nominal value of
To Debentureholders		the debentures

(6) If debentures are redeemable at a premium -

Premium on Redemption of Debentures A/c	Dr.	with the amount of premium
To Debentureholders A/c		of redemption

(7) On payment -

Debentureholders	Dr.	with the amount paid
To Bank		

(8) On transfer of Premium on Redemption of Debentures to Debenture Redemption Fund A/c (In case Premium on Redemption of Debenture Account is not opened at the time of issue of debentures) -

Debenture Redemption Fund A/c	Dr.	with the amount of premium
To Premium on Redemption of Debentures A/c		on redemption

(9) On transfer of Loss of Issue of Debentures Account to Debenture Redemption Fund Account (In case Loss on Issue of Debentures Account is not yet written off) -

Debenture Redemption Fund A/c	Dr.	with the amount
To Loss of Issue of Debentures A/c		

**N.B. :** Either entry (8) or entry (9) may be passed depending upon the circumstances.

(10) On transfer of Debenture Redemption Fund Account balance on General Reserve -

Debenture Redemption Fund A/c	Dr.	with the balance left
To General Reserve A/c		

**Note:** In some cases, the company may decide to take credit every year. In such a case, the entry for interest will be –

Debenture Redemption Fund Policy A/c      Dr.      with the interest  
     To Debenture Redemption Fund A/c

**Illustration 12** (When debentures are redeemed out of profits)

Strong Ltd. issued 10,000, 14% debentures of ₹100 each on 1st April, 2006 at a discount of 5% repayable at a premium of 10% after 5 years out of the profits of the company. On 1st April, 2011, balance in the Debenture Redemption Reserve Account stood at ₹3,40,000.

You are required to give journal entries in the books of the company both at the time of issue and redemption of debentures.

**Solution:**

**Journal Entries**

<i>Date</i>	<i>Particulars</i>		<i>Dr.(₹)</i>	<i>Cr.(₹)</i>
2006				
April 1	Bank	Dr.	9,50,000	
	Loss on Issue of Debentures A/c	Dr.	1,50,000	
	To 14% Debentures A/c			10,00,000
	To Premium on Redemption of Debentures A/c			1,00,000
	(Allotment of 10,000, 14% debentures of ₹100 each issued at a discount of 5% and redeemable at a premium of 10% as per the Board resolution dated.....)			
2011				
April 1	14% Debentures A/c	Dr.	10,00,000	
	Premium on Redemption of Debentures A/c	Dr.	1,00,000	
	To Debentureholders A/c			11,00,000
	(Being the amount due on redemption)			
"	Profit and Loss Appropriation A/c	Dr.	1,60,000	
	To Debenture Redemption Reserve A/c			1,60,000
	(Being the transfer of profit to debenture redemption reserve account as required under SEBI guidelines)			

“	Debentureholders To Bank <u>(Being the amount paid to debentureholders)</u>	Dr.	11,00,000	
				11,00,000
“	Profit and Loss Appropriation A/c To General Reserve <u>(Being the transfer of profit to the extent of 50% of the face value of debentures redeemed)</u>	Dr.	5,00,000	
				5,00,000
“	Debenture Redemption Reserve A/c To General Reserve A/c <u>(Being the transfer of balance in debenture redemption reserve account to General reserves on redemption of debentures).</u>	Dr.	5,00,000	
				5,00,000

**Note:** Loss on Issue of Debentures Account has to be written off by the company over the period of 5 years preferably at the rate of ( $\text{₹}1,50,000 \times 1/5$ ) = ₹30,000 per year.

**Illustration 13** (When Sinking Fund is created to redeem debentures at the end of the specified period).

Steady Ltd. issued 2,000, 9% Debentures of ₹100 each at par on 1st April 2006 repayable at the end of 5 years at a premium of 6%. It was decided to institute a Sinking Fund for the purpose, the investments being expected to yield 8% p.a. Sinking Fund tables show that Re. 1 per annum at 8% compound interest amounts to ₹5.867 in 5 years. Investments were made in multiples of rupees ten only.

On 31st March, 2011 the investments realised ₹1,75,000 and the debentures were redeemed. The bank balance as on that date was ₹54,800.

You are required to show the journal entries relating to the creation of Sinking Fund and to prepare the relevant ledger accounts in the books of the company. Ignore debenture interest.

**Solution:**

#### Journal Entries

Date	Particulars	Dr. (₹)	Cr. (₹)
2006			
April 1	Bank	Dr. 2,00,000	
	Loss on Issue of Debentures	Dr. 12,000	
	To 9% Debentures A/c		2,00,000
	To Premium on Redemption of Debentures A/c		12,000
	<u>(Allotment of 2,000 9% Debentures of ₹100 each issued at par redeemable at a premium of 6%)</u>		

2007				
Mar. 31	Profit and Loss Appropriation A/c	Dr.	36,134	
	To Debenture Redemption Fund A/c			36,134
	<u>(Transfer of the amount out of Profit to Debenture Redemption Fund Account to provide for the redemption of debentures)</u>			
"	Debenture Redemption Fund Investment A/c	Dr.	36,130	
	To Bank			36,130
	<u>(Amount of profit set aside invested in outside securities in multiples of ₹10)</u>			
2008				
Mar. 31	Bank	Dr.	2,890	
	To Interest on Debenture Redemption Fund Investment A/c			2,890
	<u>(Receipt of interest on investments @ 8% p.a.)</u>			
"	Interest on Debenture Redemption Fund Investment A/c	Dr.	2,890	
	To Debenture Redemption Fund A/c			2,890
	<u>(Transfer of Interest to Debenture Redemption Fund Account)</u>			
"	Profit and Loss Appropriation A/c	Dr.	36,134	
	To Debenture Redemption Fund A/c			36,134
	<u>(Transfer of the amount out of the profit to Debenture Redemption Fund Account to provide for the redemption of debentures)</u>			
"	Debenture Redemption Fund Investment A/c	Dr.	39,020	
	To Bank			39,020
	<u>(Amount of profit set aside together with the interest received on investments invested in outside securities in multiples of ₹10)</u>			

2009

Mar. 31	Bank	Dr.	6,012	
	To Interest on Debenture Redemption Fund Investment A/c			6,012
	<u>(Receipt of Interest on Investment @ 8% p.a.)</u>			
"	Interest on Debenture Redemption Fund Investment A/c	Dr.	6,012	
	To Debenture Redemption Fund A/c			6,012
	<u>(Transfer of Interest to Debenture Redemption Fund Account)</u>			
"	Profit and Loss Appropriation A/c	Dr.	36,134	
	To Debenture Redemption Fund A/c			36,134
	<u>(Transfer of the amount out of profit to Debenture Redemption Fund Account to provide for the redemption of debentures)</u>			
"	Debenture Redemption Fund Investment A/c	Dr.	42,150	
	To Bank			42,150
	<u>(Amount of profit set aside together with the interest received on investments invested in outside securities in multiples of ₹10)</u>			
2010				
Mar. 31	Bank	Dr.	9,384	
	To Interest on Debenture Redemption Fund Investment A/c			9,384
	<u>(Receipt of interest on investments @ 8% p.a.)</u>			
"	Interest on Debenture Redemption Fund Investment A/c	Dr.	9,384	
	To Debenture Redemption Fund A/c			9,384
	<u>(Transfer of interest to Debenture Redemption Fund Account)</u>			

“	Profit and Loss Appropriation A/c To Debenture Redemption Fund A/c	Dr.	36,134	36,134
	<u>(Transfer of the amount out of profit to Debenture Redemption Fund Account to provide for the redemption of debentures)</u>			
“	Debenture Redemption Fund Investment A/c To Bank	Dr.	45,520	45,520
	<u>(Amount of profit set aside together with the interest received on investments invested in outside securities in multiples of ₹ 10)</u>			
2011 Mar. 31	Bank	Dr.	13,025	
	To Interest on Debenture Redemption Fund Investment A/c		13,025	
	<u>(Receipt of interest on Investment @8% p.a.)</u>			
“	Interest on Debenture Redemption Fund Investment A/c To Debenture Redemption Fund A/c	Dr.	13,025	13,025
	<u>(Transfer of interest to Debenture Redemption Fund Account)</u>			
“	Profit and Loss Appropriation A/c To Debenture Redemption Fund A/c	Dr.	36,153	36,153
	<u>(Transfer of the amount out of profit to Debenture Redemption Fund Account to provide for the redemption of debentures)</u>			
“	Bank To Debenture Redemption Fund Investment A/c	Dr.	1,75,000	1,75,000
	<u>(Realisation of investments to pay off the debentures)</u>			
“	Debenture Redemption Fund Investment A/c To Debenture Redemption Fund A/c	Dr.	12,180	12,180

	(Transfer of profit on sale of investment to Debenture Redemption Fund A/c)		
“	9% Debentures A/c	Dr.	2,00,000
	Premium on Redemption of Debentures A/c	Dr.	12,000
	To Debentureholders A/c		2,12,000
	(Amount due on redemption at a premium of 6%)		
“	Debentureholders A/c	Dr.	2,12,000
	To Bank		2,12,000
	(Payment made for amount due)		
“	Debenture Redemption Fund A/c	Dr.	12,000
	To Loss on Issue of Debentures A/c		12,000
	(Transfer of loss on issue of debentures account to Debenture Redemption Fund A/c)		
“	Debenture Redemption Fund A/c	Dr.	2,12,180
	To General Reserve A/c		2,00,000
	To Capital Reserve A/c		12,180
	(Transfer of balance standing at Debenture Redemption Fund Account to General Reserve Account and Capital Reserve A/c)		

**Ledger Accounts****9% Debentures Account**

Dr.			Cr.		
Date Particulars	₹	Date Particulars	₹		
31.3.2007	To Balance c/d	2,00,000	1.4.2006	By Bank	2,00,000
31.3.2008	To Balance c/d	2,00,000	1.4.2007	By Balance b/d	2,00,000
31.3.2009	To Balance c/d	2,00,000	1.4.2008	By Balance b/d	2,00,000
31.3.2010	To Balance c/d	2,00,000	1.4.2009	By Balance b/d	2,00,000
31.3.2011	To Debenture-holder's A/c	2,00,000	1.4.2010	By Balance b/d	2,00,000

**Debentureholders Account**

<i>Date Particulars</i>		₹	<i>Date Particulars</i>		₹
31.3.2011	To Bank	2,12,000	31.3.2011	By 9% Debentures A/c	2,00,000
				“ Premium on	
				Redemption of	
				Debentures A/c	<u>12,000</u>
		<u>2,12,000</u>			<u>2,12,000</u>

**Debenture Redemption Fund Account**

<i>Date Particulars</i>		₹	<i>Date Particulars</i>		₹
31.3.2007	To Balance c/d	36,134	31.3.2007	By Profit and Loss	
				Appropriation A/c	<u>36,134</u>
			1.4.2007	“ Balance b/d	36,134
31.3.2008	“ Balance c/d	75,158	31.3.2008	By Interest on Deb.	
				Redemption Fund	
				Investment A/c	2,890
			31.3.2008	By Profit and Loss	
				Appropriation A/c	<u>36,134</u>
		<u>75,158</u>			<u>75,158</u>
31.3.2009	To Balance c/d	1,17,304	1.4.2005	By Balance b/d	75,158
			31.3.2009	By Interest on Deb.	
				Redemption Fund	
				Investment A/c	6,012
			“	” Profit and Loss	
				Appropriation A/c	<u>36,134</u>
		<u>1,17,304</u>			<u>1,17,304</u>
31.3.2010	To Balance c/d	1,62,822	1.4.2009	By Balance b/d	1,17,304
			31.3.2010	“ Interest on Deb.	
				Redemption Fund	
				Investment A/c	9,384
			“	” Profit and Loss	
				Appropriation A/c	<u>36,134</u>
		<u>1,62,822</u>			<u>1,62,822</u>
31.3.2011	To Loss on		1.4.2010	By Balance b/d	1,62,822
	Issue of		31.3.2011	“ Interest on	
	Debentures			Debenture	
	A/c	12,000		Redemption	
“	To General			Fund Invest-	
	Reserve A/c	2,00,000		ment A/c	13,025
“	To Capital			” Profit and Loss	
	Reserve A/c	12,180		Appropriation	
	(Profit on sale			A/c	36,153

of Investment treated as capital profit)	“ Debiture Redemption Fund Invest- ment A/c (Profit on sales of investments)	<u>12,180</u>
<u>2,24,180</u>		<u>2,24,180</u>

### Debiture Redemption Fund Investment A/c

Date Particulars	₹	Date Particulars	₹
31.3.2007 To Bank	36,130	31.3.2007 By Balance c/d	36,130
1.4.2007 To Balance b/d	36,130	31.3.2008 By Balance c/d	75,150
31.3.2008 “ Bank	<u>39,020</u>		<u>75,150</u>
	<u>75,150</u>		<u>75,150</u>
1.4.2008 To Balance b/d	75,150	31.3.2009 By Balance c/d	1,17,300
31.3.2009 “ Bank	<u>42,150</u>		<u>1,17,300</u>
	<u>1,17,300</u>		<u>1,17,300</u>
1.4.2009 To Balance b/d	1,17,300	31.3.2010 By Balance c/d	1,62,820
31.3.2010 “ Bank	<u>45,520</u>		<u>1,62,820</u>
	<u>1,62,820</u>		<u>1,62,820</u>
1.4.2010 To Balance b/d	1,62,820	31.3.2011 By Bank	1,75,000
31.3.2011 “ Debiture Redemption Fund A/c (Profit on sale)	<u>12,180</u>		<u>1,75,000</u>
	<u>1,75,000</u>		<u>1,75,000</u>

### Interest on Debiture Redemption Fund Investment Account

Date Particulars	₹	Date Particulars	₹
31.3.2008 To Debiture Redemption Fund A/c	<u>2,890</u>	31.3.2008 By Bank A/c	<u>2,890</u>
31.3.2009 To Debiture Redemption Fund A/c	<u>6,012</u>	31.3.2009 By Bank A/c	<u>6,012</u>
31.3.2010 To Debiture Redemption Fund A/c	<u>9,384</u>	31.3.2010 By Bank A/c	<u>9,384</u>
31.3.2011 To Debiture Redemption Fund A/c	<u>13,025</u>	31.3.2011 By Bank A/c	<u>13,025</u>

**Working Notes:**

- (1) Sum required for the redemption of debentures has been arrived at as follows:

	<u>₹</u>
Nominal value of 2,000 9% debentures @ ₹100	2,00,000
Add: Premium payable on redemption @ 6%	12,000
Sum required after 5 years	2,12,000

- (2) Amount of profit set aside every year has been arrived at as follows:

Sinking fund tables show that Re. 1 per annum at 8% compound interest amounts to ₹5.867 in 5 years. Since ₹2,12,000 is required, the amount appropriated per annum will be:

$$2,12,000 \div 5.867 = ₹36,134 \text{ (approx.)}$$

- (3) Profit on sale of investment is a capital profit and hence transferred to Capital Reserve Account.
- (4) The payment of debenture interest is ignored.

**Illustration 14** (When sinking Fund is created and debentures are redeemed partly at any time within the specified period).

S.S. Ltd., had ₹1,50,000, 12% debentures outstanding on 1st April, 2011. The Debenture Redemption Fund Account of the Company stood at ₹78,000 on the same date represented by investment in securities of ₹100 each. The directors of the company decided to sell ₹50,000 worth of securities at ₹102 and to redeem ₹50,000 debentures at a premium of 5%.

You are required to show the journal entries in the books of the company relating to the sale of securities and the redemption of debentures.

**Solution:****Journal Entries**

Date	Particulars		Dr.(₹)	Cr.(₹)
2011				
April 1	Bank	Dr.	51,000	
	To Debenture Redemption Fund Investment A/c			51,000
	(Realisation of investments in securities of ₹ 100 each at ₹102 each to pay off the debentures)			
"	Debenture Redemption Fund Investment A/c	Dr.	1,000	
	To Debenture Redemption Fund A/c			1,000
	(Transfer of profit on sale of investments to Debenture Redemption Fund Account)			

“	12% Debentures A/c	Dr.	50,000	
	Premium on Redemption of Debentures A/c	Dr.	2,500	
	To Debentureholders A/c			52,500
	<u>(Amount due on redemption at a premium of 5%)</u>			
“	Debentureholders A/c	Dr.	52,500	
	To Bank			52,500
	<u>(Payment made of amount due)</u>			
“	Debenture Redemption Fund A/c	Dr.	2,500	
	To Premium on Redemption of Debentures A/c			2,500
	<u>(Transfer of Premium on Redemption of Debentures to Debenture Redemption Fund A/c)</u>			
“	Debenture Redemption Fund A/c	Dr.	50,000	
	To General Reserve A/c			50,000
	<u>(Transfer of the nominal value of debentures redeemed to General Reserve A/c)</u>			
“	Debenture Redemption Fund A/c	Dr.	1,000	
	To Capital Reserve A/c			1,000
	<u>(Profit on sale of investment transferred to Capital Reserve)</u>			

**Notes:**

- (1) It has been assumed that the provision has been made for the premium on redemption. Hence, it has been debited to Debenture Redemption Fund Account.
- (2) After debentures are redeemed, an amount equal to the nominal value of the debentures redeemed has been transferred to General Reserve from the Debenture Redemption Fund Account.

**Illustration 15** (When Insurance Policy is taken out to provide cash for redemption of debentures).

Go Go Ltd. issued 500, 12% Debentures of ₹ 100 each at par on 1st April, 2008, repayable at par after 3 years on 31st March, 2011. The directors decided to take out an insurance policy to provide necessary cash for the redemption of the debentures. The annual premium for the policy, payable on 1st April every year was ₹ 15,705.

You are required to show the journal entries and to prepare the relevant ledger accounts in the books of the company relating to the issue and redemption of debentures.

**Solution:****Journal Entries**

<i>Date</i>	<i>Particulars</i>		<i>Dr.( ₹)</i>	<i>Cr.( ₹)</i>
2008				
April 1	Bank To 12% Debentures A/c  (Allotment of 500 12% Debenture of ₹100 each as per Board's resolution dated.....)	Dr.	50,000	50,000
"	Debenture Redemption Fund Policy A/c To Bank  (Payment of annual premium for the policy taken out to provide cash for redemption of debentures)	Dr.	15,705	15,705
2009				
Mar. 31	Profit and Loss Appropriation A/c To Debenture Redemption Fund A/c  (Transfer of profit to Debenture Redemption Fund Account)	Dr.	15,705	15,705
April 1	Debenture Redemption Fund Policy A/c To Bank  (Payment of annual premium for the policy taken out to provide cash for redemption of debentures)	Dr.	15,705	15,705
2010				
Mar. 31	Profit and Loss Appropriation A/c To Debenture Redemption Fund A/c  (Transfer of profit to Debenture Redemption Fund Account)	Dr.	15,705	15,705
April 1	Debenture Redemption Fund Policy A/c To Bank  (Payment of annual premium for the policy taken out to provide cash for redemption of debentures)	Dr.	15,705	15,705

2011

Mar. 31	Profit and Loss Appropriation A/c To Debenture Redemption Fund A/c	Dr.	15,705		15,705
	<u>(Transfer of profit to Debenture Redemption Fund Account)</u>				
"	Bank	Dr.	50,000		50,000
	<u>To Debenture Redemption Fund Policy A/c</u>				
	<u>(Receipt of policy amount on maturity)</u>				
"	Debenture Redemption Fund Policy A/c	Dr.	2,885		2,885
	<u>To Debenture Redemption Fund A/c</u>				
	<u>(Transfer of accumulated interest on the policy to Debenture Redemption Fund A/c)</u>				
"	12% Debentures A/c	Dr.	50,000		50,000
	<u>To Debentureholders A/c</u>				
	<u>(Amount due on redemption)</u>				
"	Debentureholders A/c	Dr.	50,000		50,000
	<u>To Bank</u>				
	<u>(Payment made for the amount due)</u>				
"	Debenture Redemption Fund A/c	Dr.	50,000		50,000
	<u>To General Reserve A/c</u>				
	<u>(Transfer of the balance of Debenture Redemption Fund A/c to General Reserve)</u>				

**Ledger Accounts**  
**12% Debentures Account**

<i>Dr.</i>			<i>Cr.</i>		
<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2009	To Balance c/d	<u>50,000</u>	1.4.2008	By Bank	<u>50,000</u>
31.3.2010	To Balance c/d	<u>50,000</u>	1.4.2009	By Balance b/d	<u>50,000</u>
31.3.2011	To Debentureholders A/c	<u>50,000</u>	1.4.2010	By Balance b/d	<u>50,000</u>

**Debenture Redemption Fund Policy Account**

<i>Date Particulars</i>		₹	<i>Date Particulars</i>		₹
1.4.2008	To Bank	<u>15,705</u>	31.3.2009	By Balance c/d	<u>15,705</u>
1.4.2009	To Balance b/d	15,705	31.3.2010	By Balance c/d	31,410
	“ Bank	<u>15,705</u>			<u>31,410</u>
		<u>31,410</u>			<u>31,410</u>
1.4.2010	To Balance b/d	31,410	31.3.2011	By Bank	50,000
“	” Bank	15,705			
31.3.2011	“ Debenture Redemption Fund A/c	<u>2,885</u>			
		<u>50,000</u>			<u>50,000</u>

**Debenture Redemption Fund Account**

<i>Date Particulars</i>		₹	<i>Date Particulars</i>		₹
31.3.2009	To Balance c/d	<u>15,705</u>	31.3.2009	By Profit and Loss Appropriation A/c	<u>15,705</u>
31.3.2010	To Balance c/d	31,410	1.4.2009	By Balance b/d	15,705
		<u>31,410</u>	31.3.2010	“ Profit and Loss Appropriation A/c	<u>15,705</u>
					<u>31,410</u>
31.3.2011	To General Reserve A/c	50,000	1.4.2010	By Balance b/d	31,410
			31.3.2011	“ Profit and Loss Appropriation A/c	15,705
			31.3.2011	“ Debenture Redemption Fund Policy A/c	<u>2,885</u>
		<u>50,000</u>			<u>50,000</u>

**18. REDEMPTION OUT OF THE PROCEEDS OF FRESH ISSUE OF SHARES OR DEBENTURES**

Debentures may be redeemed from the funds raised by the issue of fresh shares or debentures. Accounting entries are to be passed for fresh issue of shares/ debentures apart from the entries for redemption. The following entries will be passed:

1. On issue of fresh shares or debentures –

Bank	Dr.	with the amount raised by fresh issue
To Share Capital A/c		
To Debentures A/c		

2. On Redemption of old debentures -

(a) Debentures A/c	Dr.	with the nominal value of the debentures
To Debentureholders A/c		
(b) Debentureholders A/c	Dr.	with the amount paid
To Bank		

**Notes:**

- (1) Working capital remains intact as the new share capital or debenture takes the place of old debentures.
- (2) If the fresh issue is made at a premium or at a discount the entry should be passed accordingly.
- (3) If the debentures are redeemable at a premium, Premium on Redemption of Debentures A/c should be credited at the time of issue by debiting Loss on Issue of Debentures A/c and before the payment is made, the same should be transferred to Debentureholders A/c.
- (4) The creation of Debenture Redemption Reserve may not be necessary in this case since the additional capital or debentures raised for the purpose of redemption of debentures replaces the existing debentures.

**19. REDEMPTION OUT OF SALE PROCEEDS OF ASSETS OF THE COMPANY**

When debentures are redeemed out of the sale proceeds of assets of the company, the accounting treatment is as follows:

- (i) On sale of assets

Bank	Dr.	(with sale proceeds)
To Respective Assets A/c		

The profit or loss on sale of the asset will be transferred to profit and loss account.

The entries for redemption of debenture will be the same as discussed before.

**Note:** Debenture redemption reserve account to the extent of 50% of the face value of the debentures issued may be maintained as per the SEBI Guidelines.

**Illustration 16** (When Debentures are redeemed out of the proceeds of fresh issue of shares or debentures).

**The following is the Balance Sheet of Good Luck Ltd. as on 1st April, 2011**

<i>Liabilities</i>	<i>₹.Assets</i>	<i>₹</i>
<i>Share Capital:</i>	<i>Fixed Assets:</i>	
Authorised Capital:	Land and Building	2,00,000
1,00,000 Equity Shares	Plant and Machinery	2,00,000
of ₹ 10 each	Furniture and Fixtures	10,000
10,00,000	<i>Current Assets, Loans</i>	
50,000 Equity shares of	<i>and Advances:</i>	
₹ 10 each fully paid-up	<i>A. Current Assets</i>	
5,00,000	Stock in Trade	1,70,000
<i>Reserves and Surplus:</i>	Sundry Debtors	2,00,000
Profit & Loss A/c	Cash at Bank	20,000
50,000	<i>B. Loans and Advances</i>	Nil
<i>Secured Loans:</i>		
1,000 12% Debentures of		
₹ 100 each fully paid-up		
1,00,000		

*Current Liabilities**and Provisions:**A. Current Liabilities*

Creditors 1,50,000

*B. Provisions* Nil8,00,0008,00,000

The Debenture Trust Deed provides that the company may redeem the debentures at a premium of 5% at any time before the maturity. In order to exercise this option, the directors decided to issue 10,000 equity shares of ₹10 each at ₹11 on this day and to redeem the debentures. All the shares were duly subscribed and the debentures were redeemed.

Show the journal entries in the books of the company. Also prepare the Balance Sheet after the redemption of debentures.

**Solution:****Journal Entries**

<i>Date</i>	<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
2011				
April 1	Bank	Dr.	1,10,000	
	To Equity Share Capital A/c			1,00,000
	To Securities Premium A/c			10,000
	(Allotment of 10,000 equity shares of ₹10 each issued at a premium of ₹1/- per share as per Board's resolution dated....)			
"	12% Debentures A/c	Dr.	1,00,000	
	Premium on Redemption of Debenture A/c	Dr.	5,000	
	To Debentureholders			1,05,000
	(Amount due on redemption of debentures at premium of 5%)			
"	Debentureholders	Dr.	1,05,000	
	To Bank			1,05,000
	(Payment made for the amount due)			
"	Securities Premium A/c	Dr.	5,000	
	To Premium on Redemption of Debentures A/c			5,000
	(Writing off premium on Redemption of Debentures against the Securities Premium A/c)			

**Balance Sheet of Good Luck Ltd. as at 1st April, 2011  
(After Redemption of Debentures)**

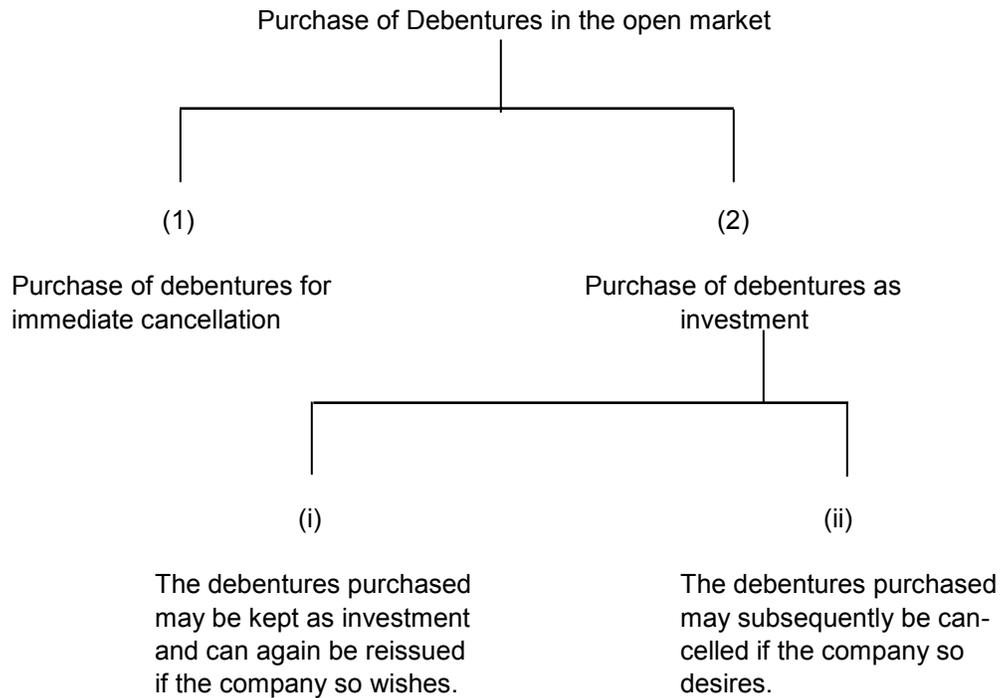
<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
	₹		₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital		Land and Building	2,00,000
1,00,000 Equity shares		Plant and Machinery	2,00,000
of ₹10 each	<u>10,00,000</u>	Furniture and Fixture	10,000
Issued, Subscribed and Paid-up		<i>Current Assets:</i>	
Capital - 60,000 Equity		Stock-in-trade	1,70,000
Shares of ₹10 each		Sundry Debtors	2,00,000
fully paid-up	6,00,000	Cash at Bank	25,000
<i>Reserves and Surplus</i>			
Securities Premium Account	5,000		
Profit and Loss A/c	50,000		
<i>Current Liabilities</i>			
Creditors	<u>1,50,000</u>		
	<u>8,05,000</u>		<u>8,05,000</u>

**Notes:** (1) In this case, additional equity share capital raised for the purpose of redemption of debentures replaces the debentures. As such transfer to General Reserve out of profits of the company is not required.

(2) As Section 78 permits the writing off of premium on redemption of debentures against Securities Premium Account, the same has been written off against the Securities Premium Account.

## 20. PURCHASE OF DEBENTURES IN THE OPEN MARKET

A company if authorised by its articles of association, can buy its own debentures in the open market. The debentures so purchased can be used either for immediate cancellation or redemption of debentures or for investment. The debentures so purchased for investment can subsequently either be reissued when the company requires additional cash or be cancelled if the company so desires. Debentures when purchased for investment are popularly known as "Own Debentures". This can be categorised as follows:



## 21. PURCHASE OF DEBENTURES FOR IMMEDIATE CANCELLATION

The accounting entries in such a case will be as follows:

(a) *Where no Sinking Fund exists*

(1) On purchase and cancellation of debentures -

Debentures A/c	Dr.	with the amount paid
To Bank		

**Notes:** 1. If there is any difference between the nominal value of the debentures cancelled and the price paid for them, the same has to be treated as profit or loss on cancellation and should be credited or debited to Profit on Redemption of Debentures Account or Loss on Redemption of Debentures Account. Thus, the entry for this will be as follows:

*In case of profit -*

Debentures A/c	Dr.	with the nominal value of debentures cancelled
To Bank		with the price paid for them
To Profit on Redemption of Debentures A/c		with the profit, if any.

*In case of loss -*

Debentures A/c	Dr.	with the nominal value of debentures cancelled
Loss on Redemption of Debentures A/c	Dr.	with the loss, if any
To Bank A/c		with the total

Such profit or loss, being of capital nature, should be transferred to Capital Reserve Account (if profit) or written off against the Profit and Loss Account or Capital Profit including Securities Premium Account (if loss). The entry for this will be as follows:

*In case of profit -*

Profit on Redemption of Debentures A/c	Dr.	with the profit on redemption
To Capital Reserve A/c		

*In case of loss -*

Profit and Loss A/c	Dr.	with the loss on redemption
Or, Capital Reserve A/c (if any)	Dr.	
Or, Securities Premium A/c (if any)	Dr.	
To Loss on Redemption of Debenture A/c		

2. On transfer of profits which would otherwise be available for dividend to Debenture Redemption Reserve -

Profit and Loss Appropriation A/c	Dr.	with the nominal value of debentures cancelled
To Debenture Redemption Reserve A/c		

**Note:** As in this case, working capital of the company is adversely affected, it is desirable that an amount equal to the nominal value of the debenture cancelled should be transferred to the Debenture Redemption Reserve Account out of the profits of the company. This will help in maintaining the working capital of the company by not paying as dividend a part of the profit set aside.

*(b) Where Sinking Fund Exists -*

1. On Sale of Sinking Fund Investments -

Bank	Dr.	with the realisation value
To Debenture Redemption Fund Investment A/c		

**Note:** If there is any profit or loss on sale of investments, the same has to be transferred to Debenture Redemption Fund Account.

2. On purchase and cancellation of debentures -

Debentures A/c	Dr.	with the amount paid
To Bank		

3. Profit or loss on cancellation or redemption of debentures shall be transferred to Sinking Fund or Debenture Redemption Fund Account. The accounting entries:

*In case of profit:*

Debentures A/c	Dr.	with the nominal value
To Bank		with the price paid
To Profit on Redemption		with the amount of profit
Debentures A/c		

Profit on Redemption of Debentures A/c	Dr.	with the profit
To Sinking Fund A/c		

*In case of loss:*

Debentures A/c	Dr.	with the nominal value
Loss on Cancellation or Redemption	Dr.	with the loss on cancellation/
of Debentures A/c		redemption
To Bank		with the amount paid

Sinking Fund A/c	Dr.	with the amount of loss
To Loss on Cancellation or		
Redemption of Debentures A/c		

4. On transfer of the nominal value of the debentures cancelled to General Reserve Account from the Debenture Redemption Fund Account -

Debenture Redemption Fund A/c	Dr.	with the nominal value of the
To General Reserve A/c		debentures cancelled

## **22. PURCHASE OF DEBENTURES AS INVESTMENT (OWN DEBENTURES)**

The accounting entries in such a case will be as follows:

(a) *Where no Sinking Fund Exists:*

On purchase of debentures as investment –

Own Debentures A/c	Dr.	
Or Investment in Own Debentures A/c	Dr.	with the amount paid for the
To Bank		debentures

(b) *Where Sinking Fund Exists:*

On sale of investments -

Bank	Dr.	with the realised amount
To Debenture Redemption Fund		
Investment A/c		

**Note:** If there is any profit or loss on sale of investments the same has to be transferred to Debenture Redemption Fund Account.

On purchase of debentures as investment -

Own Debentures A/c	Dr.	
Or Investment in Own Debentures A/c	Dr.	with the amount paid for the debentures
To Bank		

**Notes:** (1) Own Debentures Account signifies investment and will be shown as an asset in the Balance Sheet unless such debentures are re-issued or cancelled in future.

(2) Until and unless, these debentures are re-issued or cancelled in future, the question of profit or loss on redemption of debentures will not arise.

#### *Cancellation of Own Debentures*

When own debentures are subsequently cancelled -

Debentures A/c	Dr.	with the nominal value of the debentures cancelled
To Own Debentures A/c		
Or To Investment in Own Debentures A/c		

**Note:** (1) If there is any difference between the nominal value of the debentures cancelled and the amount standing to the debit of Own Debentures Account, the same has to be treated as profit or loss on redemption of debentures and should be credited or debited to Profit on Redemption of Debentures Account or Loss on Redemption of Debentures Account. The entry for this will be as follows:

*In case of profit -*

Debentures A/c	Dr.	nominal value of the debentures cancelled
To Own Debentures A/c		book value of the own debentures cancelled
To Profit on Redemption of Debentures A/c		with the difference, if any

*In case of loss -*

Debentures A/c	Dr.	nominal value of the debentures cancelled
Loss on Redemption of Debentures A/c	Dr.	with the difference, if any
To Own Debenture A/c		book value of the own debentures

(2) If Sinking Fund exists, the accounts of profit on redemption of debentures or loss on redemption of debentures should be transferred to debenture redemption fund account.

(3) If no Sinking Fund exists it is desirable that an amount equal to the nominal value of the debentures cancelled should be transferred to Debenture Redemption Reserve Account out of the profit of the company on cancellation.

(4) If Sinking Fund exists, on cancellation, an amount equal to the nominal value of the debentures cancelled should be transferred to General Reserve from the Debenture Redemption Fund Account.

### 23. INTEREST ON OWN DEBENTURES

The purchase of its own debentures by a company involves the question of adjustment of interest payable on these debentures. As soon as the company purchases its own debentures, it saves the interest which would have been payable on them. When the company purchases its own debentures for immediate cancellation, outstanding debentures are reduced by the amount cancelled and hence Debenture Interest Account is debited in future only with the net amount of interest payable on the outstanding debentures. But where debentures are purchased as investment, the total debentures are deemed to be outstanding. Some debentures are held by the company itself as its own investment, the interest on these own debentures will be retained by the company and the amount of interest on debentures held by the outsiders will be actually paid by the company. The accounting entries in such a case will be as follows:

(a) *Where no Sinking Fund exists:*

(1) On interest becoming due on debentures -

Debenture Interest A/c	Dr.	with the total amount of interest on all the debentures
To Debentureholders A/c		with the amount of interest payable on debentures held by outsiders
To Interest on Own Debentures A/c		with the amount of interest on debentures held by the company

(2) On payment of interest on debentures -

Debentureholders A/c	Dr.	with the amount of interest paid to outsiders
To Bank		

(3) On transfer of Debenture Interest to Profit and Loss A/c

Profit and Loss A/c	Dr.	with the total interest on all the debentures
To Debenture Interest A/c		

(4) On transfer of Interest on Own Debentures to Profit and Loss A/c

Interest on Own Debentures A/c	Dr.	with the amount of interest on debentures held by the company
To Profit and Loss A/c		

**Note:** As the adjustment of interest on debentures head as investments by the company involves debiting and crediting the Profit and Loss Account with the same amount, interest on such debentures can be omitted altogether. Thus, alternatively, the following entries can be passed:

(1) On interest becoming due on debentures held by outsiders -

Debenture Interest A/c	Dr.	with the net amount of interest payable on debentures held by outsiders
To Debentureholders A/c		

(2) On payment of interest to debentureholders -

Debentureholders A/c	Dr.	with the net amount of interest
To Bank		payable on debentures held by outsiders

(3) On transfer of Debenture Interest to Profit and Loss A/c

Profit and Loss A/c	Dr.	with the net amount of interest
To Debenture Interest A/c		payable on debentures held by outsiders

(b) *Where Sinking Fund exists:* Where the debentures are purchased as an investment against the Sinking Fund, the interest on such debentures is credited to the Sinking Fund Account as if the debentures are outside securities. The accounting entries will be as follows:

(1) On interest becoming due on debentures

Debenture Interest A/c	Dr.	with the total amount of interest payable on all the debentures
To Debenture Redemption Fund A/c		with the amount of interest payable on debentures held by the company
To Debentureholders A/c		with the amount of interest payable on debentures held by outsiders

(2) On payment of interest to debentureholders -

Debentureholders A/c	Dr.	with the amount paid
To Bank		

(3) On transfer of interest to Profit and Loss A/c -

Profit and Loss A/c	Dr.	with the total interest payable
To Debenture Interest A/c		

**Note:** While making payment of interest to debentureholders income-tax has to be deducted at source and deposited with the Government.

#### **24. PURCHASE OF DEBENTURES BEFORE THE SPECIFIED DATE OF PAYMENT OF INTEREST [CUM-INTEREST AND EX-INTEREST QUOTATIONS]**

Interest on debentures is generally paid half-yearly to the holders on certain specified dates, e.g., 30th September and 31st March every year. If debentures are purchased exactly on these specified dates, it involves no problem. In such a case, interest is payable to the holders of debentures. But, where debentures are purchased at a date before the specified date of payment of interest the question which naturally arises is whether the price paid for such debentures includes the interest for the expired period (i.e. from the previous date of payment of interest up to the date of purchase) or not.

For this purpose it is important to note whether the price paid for the debentures is quoted as "Cum-interest" or "Ex-interest". If the purchase price for the debentures includes interest for the expired period, the quotation is said to be "Cum-interest". If, on the other hand, the purchase price for the debentures excludes the interest for the expired period, the quotation is said to be "Ex-interest". In case of Ex-interest quotation, interest has to be paid to the holders for the expired period in addition to the price paid for the debentures. In any case, the company must pay interest for the expired period and while making entry in its books at the time of purchase of the debentures, the amount paid by way of interest should be treated separately from the price actually paid for the debentures. For example, if a company purchases 10 of its 9% Debentures of ₹100 each at ₹95 each on 1st August, 2011 the dates of payment of Interest being 30th September and 31st March, the treatment of the same for "Cum-interest" and "Ex-interest" quotations will be as follows:

**N.B.** If nothing is stated, purchase and sale of debentures and government securities should be taken to be on ex-interest basis. That of shares should be presumed to be on cum-dividend basis.

(1) *In case of cum-interest quotation:* If the purchase price of ₹95 is taken to be the cum-interest price, it implies that this includes the interest for the expired period of 4 months (i.e. from 1st April, 2011 to 31st July, 2011 which amounts

$$\left( ₹100 \times \frac{9}{100} \times \frac{4}{12} \right) = ₹3$$

Therefore, the price actually paid for the debenture should be taken at (₹95 - ₹3) = ₹92. The accounting entry in such a case should be as follows:

(i) *If debentures are purchased for immediate cancellation*

9% Debentures A/c	Dr.	1,000	with the nominal value of 10 debentures
Debenture Interest A/c	Dr.	30	with the interest for expired period on 10 debentures
To Bank		950	with the price paid
To Profit on Redemption of Debentures A/c		80	with the difference

(ii) *If debentures are purchased as investment*

Own Debentures A/c	Dr.	920	with the actual price paid
Debenture Interest A/c	Dr.	30	with the interest for expired period on 10 debentures
To Bank		950	with the total

**Note:** The question of profit or loss on redemption of debentures does not arise here as the debentures are purchased as investment. In such a case, Own Debentures A/c should always be debited with the actual price paid for them.

However, when these debentures are cancelled in future, the entry would be:

9% Debentures A/c	Dr.	1,000	
To Own Debentures			920
To Profit on Redemption of Debentures			80

Profit on cancellation of debentures must be transferred to capital reserve account.

(2) *In case of ex-interest quotation:* If the purchase price of ₹95 is taken to be the ex-interest price it implies that this does not include the interest for the expired period of 4 months (i.e. from 1st April, 2011 to 31st July, 2011 which amounts to

$$\left( ₹100 \times \frac{9}{100} \times \frac{4}{12} \right) = ₹3$$

In this case, the price of ₹95 represents the price actually paid for the debentures and the company is required to pay ₹3 for every debenture as interest in addition to the purchase price of ₹95. Therefore, the company is required to pay (₹95 + ₹3) = ₹98 for every debenture in total. The accounting entry in such a case should be as follows:

(i) *If debentures are purchased for immediate cancellation*

9% Debentures A/c	Dr.	1,000	with the nominal value of 10 debentures
Debenture Interest A/c	Dr.	30	with the interest for expired period on 10 debentures
To Bank		980	with the total amount paid on 10 debentures
To Profit on Redemption of Debentures A/c		50	with the difference

(ii) *If debentures are purchased as investment*

Own Debentures A/c	Dr.	950	with the actual price paid for 10 debentures
Debenture Interest A/c	Dr.	30	with the interest for expired period on 10 debentures
To Bank		980	with the total

When these debentures are cancelled:

9% Debentures A/c	Dr.	1,000	
To Own Debentures			950
To Profit on Redemption of Debentures A/c			50

The Profit on redemption of debenture must be transferred to capital reserve account.

**Illustration 17** (When debentures are purchased for immediate cancellation and there is no Sinking Fund)

Favourite Ltd. had 2,000, 12% Debentures of ₹100 each as on 1st April, 2010. As per the terms of issue, the company purchased the following debentures in the open market for immediate cancellation:

- 1st May - 400 Debentures at ₹98 cum-interest
- 1st January - 800 Debentures at ₹100.25 cum-interest
- 1st March - 200 Debentures at ₹98.50 ex-interest

Assuming that debenture interest was payable half-yearly on 30th September and 31st March and the Income-tax was deductible at the rate of 10% at source. Show the journal entries in the books of the company and prepare the necessary ledger accounts. The company closes its books on 31st March.

**Solution:**

**Journal Entries**

Date	Particulars	Dr. (₹)	Cr. (₹)
2010		₹	₹
May 1	12% Debentures A/c	40,000	
	Debenture Interest A/c	400	
	To Bank		39,200
	To Profit on Redemption of Debentures A/c		1,200
	<u>(Cancellation of 400 Debentures of ₹100 each by purchase in the open market at ₹98 cum-interest)</u>		
	The above entry is the combined entry of the following two entries:		
	(1) 12% Debentures A/c	40,000	
	To Bank		38,800
	To Profit on Redemption of Debentures A/c		1,200
	(2) Debenture Interest A/c	400	
	To Bank		400
Sep.30	Debenture Interest A/c	9,600	
	To Debentureholders A/c		8,640
	To Income-tax Payable A/c		960
	<u>(Interest due on the outstanding debentures of ₹1,60,000 at 12% p.a. for 6 months less Income-tax @ 10%)</u>		
"	Debentureholders A/c	8,640	
	To Bank		8,640
	<u>(Payment made for interest)</u>		

“	Income-tax Payable A/c	Dr.	960	
	To Bank			960
	<u>(Deposit of Income-tax with the Government)</u>			
2011				
Jan. 1	12% Debentures A/c	Dr.	80,000	
	Debenture Interest A/c	Dr.	2,400	
	To Bank			80,200
	To Profit on Redemption of Debentures A/c			2,200
	<u>(Cancellation of 800 Debentures of ₹ 100 each by purchase in the open market at ₹ 100.25-cum-interest)</u>			
2011	12% Debentures A/c	Dr.	20,000	
Mar. 1	Debenture Interest A/c	Dr.	1,000	
	To Bank			20,700
	To Profit on Redemption of Debentures A/c			300
	<u>(Cancellation of 200 Debentures of ₹ 100 each by purchase at ₹ 98.50 ex-interest, ₹ 1,000 paid for interest debited to Debenture Interest A/c)</u>			
2011			₹	₹
Mar. 31	Debenture Interest A/c	Dr.	3,600	
	To Debentureholders A/c			3,240
	To Income-tax Payable A/c			360
	<u>(Interest due on the outstanding debentures of ₹ 60,000 at 12% p.a. for 6 months less Income-tax @ 10%)</u>			
“	Debentureholders A/c	Dr.	3,240	
	To Bank			3,240
	<u>(Payment made for interest)</u>			
“	Income-tax Payable A/c	Dr.	360	
	To Bank			360
	<u>(Deposit of Income-tax with the Government)</u>			
“	Profit and Loss A/c	Dr.	17,000	
	To Debenture Interest A/c			17,000
	<u>(Transfer of Debenture Interest to Profit and Loss A/c)</u>			

“	Profit and Loss Appropriation A/c	Dr.	1,40,000	
	To Debenture Redemption Reserve A/c			1,40,000
	(Transfer of nominal value of the debentures cancelled during the year to Debenture Redemption Reserve A/c out of the profits of the company)			
“	Profit on Redemption of Debentures A/c	Dr.	4,200	
	To Capital Reserve A/c			4,200
	(Transfer of capital profit to Capital Reserve A/c)			

**Note:** Income-tax authorities do not recognise interest for the broken period, for them the actual amount paid is the purchase/sale price of the debentures. Hence no income-tax is to be deducted in cases of interest to be recorded on purchase/sale of debentures in the middle of the interest period.

**Ledger Accounts  
12% Debentures A/c**

Dr.		Cr.
<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.5.2010	To Bank (excluding interest)	38,800
“	” Profit on Redemption of Debentures A/c	1,200
1.1.2011	To Bank	77,800
“	” Profit on Redemption of Debentures A/c	2,200
1.3.2011	“ Bank	19,700
“	” Profit on Redemption of Debentures A/c	300
31.3.2011	“ Balance c/d	<u>60,000</u>
		<u>2,00,000</u>

**Debenture Interest A/c**

		₹
<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.5.2010	To Bank	400
30.9.2010	“ Debentureholders A/c	8,640
“	” Income-tax Payable	960
1.1.2011	“ Bank	2,400
1.3.2011	“ Debentureholders A/c	1,000
31.3.2011	“ Debentureholders A/c	3,240
“	” Income-tax Payable	<u>360</u>
		<u>17,000</u>

**Profit on Redemption of Debentures A/c**

Date Particulars		₹	Date Particulars		₹
31.3.2011	To Capital Reserve Account	3,700	1.5.2010	By 12% Debentures A/c	1,200
			1.1.2011	By 12% Debentures A/c	2,200
			1.3.2011	By 12% Debentures A/c	<u>300</u>
		<u>3,700</u>			<u>3,700</u>

**Notes:** (1) ₹98 cum-interest price includes interest ₹1 for the expired period of one month (i.e., April 2010).

(2) ₹100.25 cum-interest price includes interest of ₹3 for the expired period of 3 months (i.e. October, November and December, 2010).

(3) ₹98.50 ex-interest price excludes interest of ₹5 for the expired period of 5 months (i.e., October 2010 to February, 2011).

**Illustration 18** (When debentures are purchased for immediate cancellation and Sinking Fund exists).

The following balances appeared in the books of Cheerful Ltd. as on 1st April, 2010:

9% Debentures (face value ₹100)	-	₹	1,50,000
Debenture Redemption Fund	-	₹	75,000
Debenture Redemption Fund Investment (in 8% Government Bonds of the face value of ₹90,000)	-	₹	75,000

Interest on the debentures was payable on 30th September and 31st March and interest on Government Bonds was receivable on the same dates.

On 31st May, 2010 the company purchased for immediate cancellation 250 debentures in the market at ₹95 each cum-interest. The amount required for this was raised by selling 8% Government Bonds of the face value of ₹27,000.

On 31st March, 2011 ₹20,800 was appropriated for the Sinking Fund and on the same date 8% Government Bonds were acquired for the amount plus the interest on investments. The face value of the Government Bonds acquired was ₹28,000.

You are required to show the journal entries and ledger accounts in the books of the company. Ignore Income-tax.

**Solution:****Journal Entries**

Date	Particulars	Dr. (₹)	Cr. (₹)
2010		₹ .	₹
May 31	Bank	Dr. 23,750	
	To Debenture Redemption Fund Investment A/c		23,390

	To Interest on Debenture Redemption Fund Investment A/c			360
	(Sale of Debenture Redemption Fund Investments of the face value of ₹27,000 at ₹23,750 including interest for 2 months upto 31.5.2010)			
"	Debenture Redemption Fund Investment A/c	Dr.	890	
	To Debenture Redemption Fund A/c			890
	(Transfer of profit on sale of Investments to Debenture Redemption Fund Account)			
"	9% Debentures A/c	Dr.	25,000	
	Debenture Interest A/c	Dr.	375	
	To Bank			23,750
	To Profit on Redemption of Debentures A/c			1,625
	(Cancellation of 250 Debentures of ₹100 each by purchase at ₹95 cum-interest)			
Sep.30	Debenture Interest A/c	Dr.	5,625	
	To Debentureholders (Interest) A/c			5,625
	(Interest due on the outstanding debentures of ₹1,25,000 at 9% p.a. for 6 months)			
Sep.30	Debentureholders (Interest) A/c	Dr.	5,625	
	To Bank			5,625
	(Payment made for interest)			
"	Bank	Dr.	2,520	
	To Interest on Debenture Redemption Fund Investment A/c			2,520
	(Receipt of interest on the balance of investments of ₹63,000 at 8% p.a. for 6 months)			
2011				
Mar. 31	Debenture Interest A/c	Dr.	5,625	
	To Debentureholders (Interest) A/c			5,625
	(Interest due on the outstanding debentures of ₹1,25,000 at 9% p.a. for 6 months)			

“	Debentureholders (Interest) A/c To Bank	Dr.	5,625	5,625
	<u>(Payment made for interest)</u>			
“	Bank To Interest on Debenture Redemption Fund Investment A/c	Dr.	2,520	2,520
	<u>(Receipt of interest on the balance of investments of ₹ 63,000 at 8% p.a. for 6 months)</u>			
“	Profit and Loss A/c To Debenture Interest A/c	Dr.	11,625	11,625
	<u>(Transfer of Debenture Interest to Profit and Loss A/c)</u>			
“	Interest on Debenture Redemption Fund Investment A/c To Debenture Redemption Fund A/c	Dr.	5,400	5,400
	<u>(Transfer of interest received on investment to Debenture Redemption Fund A/c)</u>			
“	Profit and Loss Appropriation A/c To Debenture Redemption Fund A/c	Dr.	20,800	20,800
	<u>(Transfer of annual profit to Debenture Redemption Fund A/c)</u>			
“	Debenture Redemption Fund Investment A/c To Bank	Dr.	26,200	26,200
	<u>(Investment of annual profit and interest received on investment)</u>			
“	Debenture Redemption Fund A/c To General Reserve A/c	Dr.	25,000	25,000
	<u>(Transfer of nominal value of 250 debentures cancelled during the year)</u>			
“	Profit on Redemption of Debentures A/c To Debenture Redemption Fund A/c	Dr.	1,625	1,625
	<u>(Transfer of capital profit on redemption of debentures)</u>			

“	Debenture Redemption Fund A/c To Capital Reserve A/c (Transfer of profit of capital profit)	Dr.	2,515		2,515
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**Ledger Accounts  
9% Debentures Account**

<i>Dr.</i>		₹	<i>Cr.</i>		₹
<i>Date</i>	<i>Particulars</i>		<i>Date</i>	<i>Particulars</i>	
31.5.2010	To Bank	23,375	1.4.2010	By Balance b/d	1,50,000
“	” Profit on Redemption of Debenture A/c	1,625			
31.3.2011	To Balance c/d	<u>1,25,000</u> <u>1,50,000</u>	1.4.2011	By Balance b/d	<u>1,50,000</u> <u>1,25,000</u>

**Debenture Redemption Fund Account**

<i>Date</i>	<i>Particulars</i>	₹	<i>Date</i>	<i>Particulars</i>	₹
31.3.2011	To General Reserve A/c	25,000	1.4.2010	By Balance b/d	75,000
“	” Capital Reserve A/c	2,515	31.5.2010	“ Profit on Redemption of Debenture A/c	1,625
“	” (₹ 1,625 + 890)		“	Deb. Red. Fund	890
“	” Balance c/d	76,200	“	Investment A/c (Profit on Sale)	890
			31.3.2011	“ Interest on Deb. Red. Fund	5,400
			“	” Profit and Loss Appropriation A/c	<u>20,800</u>
		<u>1,03,715</u>	1.4.2011	By Balance b/d	<u>1,03,715</u> <u>76,200</u>

**Debenture Redemption Fund Investment A/c**

<i>Date</i>	<i>Particulars</i>	₹	<i>Date</i>	<i>Particulars</i>	₹
1.4.2010	To Balance b/d (₹ 90,000)	75,000	31.5.2010	By Bank	23,390
31.5.2010	“ Debenture Red. Fund A/c	890	31.3.2011	” Balance c/d (₹ 91,000)	78,700
31.3.2011	“ Bank (₹ 28,000)	26,200			
		<u>1,02,290</u>			<u>1,02,290</u>
1.4.2011	To Balance b/d (₹ 91,000)	78,700			

**Profit on Redemption of Debentures Account**

Date	Particulars	₹	Date	Particulars	₹
31.3.2011	To Debenture Redemption Fund A/c		31.5.2010	By 9% Debentures A/c	1,625
		<u>1,625</u>			
		1,625			<u>1,625</u>

**Debenture Interest Account**

Date	Particulars	₹	Date	Particulars	₹
31.5.2010	To Bank	375	31.3.2011	By Profit and Loss A/c	11,625
30.9.2010	“ Debenture-holders A/c	5,625			
31.3.2011	“ Debenture-holders A/c	<u>5,625</u>			
		11,625			<u>11,625</u>

**Interest on Debenture Redemption Fund Investment A/c**

Date	Particulars	₹	Date	Particulars	₹
31.3.2011	To Debenture Redemption Fund A/c (transfer)	5,400	31.5.2010	By Bank	360
			30.9.2010	“ Bank	2,520
			31.3.2011	“ Bank	2,520
		<u>5,400</u>			<u>5,400</u>

**Working Notes:**

1. Purchase price of 250 Debentures of ₹95 each cum-interest =  $250 \times ₹95 = ₹23,750$  which includes interest on ₹25,000 (face value of 250 debentures) at 9% p.a. for the expired period of 2 months (i.e., April and May 2010 amounting to ₹375 i.e.,  $25,000 \times 9/100 \times 2/12$ ).

Therefore, price actually paid for 250 debentures  
= ₹(23,750 – 375) = ₹23,375.

**2. Profit on Redemption of Debentures**

Face value of 250 debentures cancelled	= ₹ 25,000
Less: Price actually paid for 250 debentures	= ₹ 23,375
Profit on redemption of 250 debentures	= ₹ 1,625

3. Sale proceeds of investments: According to the problem, realised value of investments must be equal to the total amount payable for 250 debentures.

Realised value of investments = ₹23,750.

This value includes interest on investments for the expired period of 2 months (April and May) on the face value of investments ₹27,000 at 8% p.a. which amounts to ₹360, i.e.,  $27,000 \times 8/100 \times 2/12$ .

Therefore, net realised value of investments  
= ₹(23,750 - 360) = ₹23,390.

4. Profit on sale of investments: Book value of the investments sold:

$$\left( \text{Rs. } 27,000 \times \frac{\text{Rs. } 75,000}{\text{Rs. } 90,000} \right) = ₹22,500$$

But net realised value of the investments = ₹23,390

Profit on sale of investments = ₹(23,390 - 22,500)  
= ₹890.

**Illustration 19** (Where debentures are purchased as investments and no Sinking Fund exists. This also includes treatment of interest on own debentures).

In the books of Joy Ltd., the 12% Debentures Account showed a credit balance of ₹2,00,000 consisting of 2,000 debentures of ₹100 each as on 1st April, 2010.

During the year debentures were purchased in the open market as follows:

1st August, 300 Debentures at ₹95 ex-interest.

1st November, 200 Debentures at ₹98 cum-interest.

The Debentures, thus, purchased were retained as investments of the company. Interest on debentures was payable half-yearly on 30th September and 31st March every year.

You are required to show the journal entries and the ledger accounts in the books of the company. Ignore Income-tax. Also show how the items would appear in the Balance Sheet.

**Solution:**

#### Journal Entries

Date	Particulars	Dr. (₹)	Cr. (₹)
2010			
Aug. 1	Own Debentures A/c	Dr. 28,500	
	Debenture Interest A/c	Dr. 1,200	
	To Bank		29,700
	[Purchase of 300 Debentures of ₹100 each at ₹95 ex-interest as investments and payment of interest for the expired period of 4 months (i.e., April to July) at 12% p.a.]		
Sep.30	Debenture Interest A/c	Dr. 10,800	
	To Debentureholders A/c		10,200
	To Interest on Own Debentures A/c		600
	(Interest due @ 12% on ₹1,70,000)		

			held by outsiders for 6 months and on ₹30,000 held by the company for 2 months)	
	<hr/>			
“	Debentureholders A/c	Dr.	10,200	
	To Bank			10,200
	(Payment made for interest due to outsiders)			
	<hr/>			
Nov. 1	Own Debentures A/c	Dr.	19,400	
	Debenture Interest A/c	Dr.	200	
	To Bank			19,600
	[Purchase of 200 Debentures of ₹100 each at ₹98 cum-interest as investments including payment of interest for the expired period of one month (i.e., October) at 12% p.a.]			
	<hr/>			
2011				
Mar. 31	Debenture Interest A/c	Dr.	11,800	
	To Debentureholders A/c			9,000
	To Interest on Own Debentures A/c			2,800
	(Interest due @ 12% p.a. on ₹1,50,000 held by outsiders and out of ₹50,000 held by the company on ₹30,000 for 6 months and on ₹20,000 for 5 months)			
	<hr/>			
“	Debentureholders A/c	Dr.	9,000	
	To Bank			9,000
	(Payment made for Interest due to outsiders)			
	<hr/>			
“	Profit and Loss A/c	Dr.	24,000	
	To Debenture Interest A/c			24,000
	(Transfer of Debenture Interest to Profit and Loss Account)			
	<hr/>			
“	Interest on Own Debentures A/c	Dr.	3,400	
	To Profit and Loss A/c			3,400
	(Transfer of Interest saved on Own Debentures to Profit and Loss Account)			
	<hr/>			

**Ledger Accounts**  
**12% Debentures Account**

<i>Dr.</i>					<i>Cr.</i>
<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To Balance c/d	2,00,000	1.4.2010	By Balance c/d	2,00,000
		<u>2,00,000</u>			<u>2,00,000</u>
			1.4.2011	By Balance b/d	2,00,000

**Own Debentures Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.8.2010	To Bank	28,500	31.3.2011	By Balance c/d	47,900
1.11.2010	To Bank	19,400			
		<u>47,900</u>			<u>47,900</u>
1.4.2011	To Balance b/d	47,900			

**Interest on Own Debenture Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To Profit and Loss A/c	3,400	30.9.2010	By Debenture Interest A/c	600
			31.3.2011	" Debenture Interest A/c	2,800
		<u>3,400</u>			<u>3,400</u>

**Debenture Interest Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.8.2010	To Bank A/c	1,200	31.3.2011	By Profit and Loss A/c	24,000
30.9.2010	To Debentureholders A/c	10,200			
"	" Interest on Own Debentures A/c	600			
1.11.2010	" Bank	200			
31.3.2011	" Debentureholders A/c	9,000			
"	" Interest on Own Debentures A/c	2,800			
		<u>24,000</u>			<u>24,000</u>

**Balance Sheet of Joy Ltd. as at 31st March, 2011**

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
Secured Loans:		Investments:	
12% Debentures		Own Debentures	
2,000 Debentures of ₹ 100		(face value ₹ 50,000)	47,900
each fully paid-up	2,00,000		

**Illustration 20** (Cancellation of Own Debentures on a subsequent date where Sinking Fund does not exist)

Continuing Illustration No. 19, if the Debentures held by the company are cancelled on 31st March, 2011, show the necessary journal entries on cancellation and the effect of the same in the Balance Sheet of the company.

**Solution:**

In addition to the entries made in Illustration No. 19 above, the following entries are required to be passed in the books of the company on cancellation of its Own Debentures:

**Journal Entries**

<i>Date</i>	<i>Particulars</i>	<i>Dr. (Rs)</i>	<i>Cr. (Rs)</i>
2011			
Mar. 31	12% Debentures A/c	Dr. 50,000	
	To Own Debentures A/c		47,900
	To Profit on Redemption of Debentures A/c		2,100
	(Cancellation of 500 debentures purchased by the company as its investments at a cost of ₹47,900 resulting into a gain of ₹2,100)		
"	Profit on Redemption of Debentures A/c	Dr. 2,100	
	To Capital Reserve A/c		2,100
	(Transfer of capital profit resulting from cancellation of own debentures to Capital Reserve Account)		
"	Profit & Loss Appropriation A/c	Dr. 50,000	
	To Debenture Redemption Reserve A/c		50,000
	(Amount equal to the nominal value of debentures redeemed transferred to DRR)		

**Ledger Accounts  
12% Debentures Account**

<i>Dr.</i>		<i>Cr.</i>			
<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>₹</i>		
31.3.2011	To Own Debentures A/c	47,900	1.4.2010	By Balance c/d	2,00,000
"	" Profit on Redemption of Debentures A/c	2,100			

“	”	Balance c/d	<u>1,50,000</u>				
			<u>2,00,000</u>				<u>2,00,000</u>
				1.4.2011	By	Balance b/d	1,50,000

### Own Debentures Account

Date	Particulars	₹	Date	Particulars	₹
1.8.2010	To Bank	28,500	31.3.2011	By 12% Debentures A/c	47,900
1.11.2010	“ Bank	<u>19,400</u>			
		<u>47,900</u>			<u>47,900</u>

### Balance Sheet of Joy Ltd. as at 31st March, 2011

Liabilities	₹	Assets	₹
<i>Reserve and Surplus:</i>			
Capital Reserve	2,000		
Debenture Redemption Reserve	50,000		
<i>Secured Loan:</i>			
12% Debentures			
1,500 Debentures of ₹ 100			
each fully paid up	1,50,000		

#### Illustration 21 (When Debentures are purchased as investments of Sinking Fund).

Confident Ltd. had 2,000 12% Debentures of ₹100 each outstanding as on 1st April 2010. The following other balances also appeared in the books of the company on this date:

	₹
Debentures Redemption Fund Account	1,00,000
Debentures Redemption Fund Investments:	
12% Port Trust Bonds (face value ₹60,000)	55,000
Own Debentures (face value ₹50,000)	45,000

Interest on the debentures was payable on 30th September and 31st March and interest on Port Trust Bonds was received on the same dates.

On 1st August, 2010, ₹20,000, 12% Port Trust Bonds were sold at ₹95 ex-interest and the amount realised was invested in Own Debentures at ₹97 cum-interest. During the year a sum of ₹5,800 was appropriated for the Sinking Fund which together with the interest received on Sinking Fund during the year was invested in Own Debentures at ₹95 each.

You are required to show the journal entries and ledger accounts in the books of the company. Also show how the items will appear in the Balance Sheet of the company. Ignore Income-tax.

**Solution:****Journal Entries**

<i>Date</i>	<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
2010				
Aug. 1	Bank	Dr.	19,800	
	To Debenture Redemption Fund Investment (Bonds) A/c			19,000
	To Interest on Debenture Redemption Fund Investment A/c		800	
	[Sale of ₹20,000 12% Port Trust Bonds at ₹95 Ex-interest and receipt of accrued interest for the expired period of 4 months, (April to July) at 12%]			
"	Debenture Redemption Fund Investment (Bonds) A/c	Dr.	667	
	To Debenture Redemption Fund A/c			667
	(Transfer of profit on sale of investments to Debenture Redemption Fund A/c)			
"	Debenture Redemption Fund Investment (Own Debenture) A/c	Dr.	18,600	
	Debenture Interest A/c	Dr.	800	
	To Bank			19,400
	(Purchase of 200 debentures of ₹100 each at ₹ 97 cum- interest as investment of Sinking Fund)			
Sep.30	Debenture Interest A/c	Dr.	11,200	
	To Debenture Redemption Fund A/c			3,400
	To Debentureholders A/c			7,800
	(Interest due on ₹1,30,000 debentures held by outsiders for 6 months at 12% and on ₹70,000 debentures held by the company on ₹50,000 for 6 months at 12% and on ₹20,000 for 2 months at 12%)			
"	Debentureholders A/c	Dr.	7,800	
	To Bank			7,800
	(Payment made for interest due to outsiders)			

“	Bank	Dr.	2,400	
	To Interest on Debenture Redemption Fund Investment A/c			2,400
	<u>(Receipt of interest on balance ₹40,000 Port Trust Bonds for 6 months at 12% p.a.)</u>			
2011				
Mar. 31	Debentures Interest A/c	Dr.	12,000	
	To Debenture Redemption Fund A/c			4,200
	To Debentureholders (Interest) A/c			7,800
	<u>(Interest due on ₹1,30,000 debentures held by outsiders and ₹70,000 debentures held by the company for 6 months at 12% p.a.)</u>			
“	Debentureholders A/c	Dr.	7,800	
	To Bank			7,800
	<u>(Payment made for interest due to outsiders)</u>			
“	Bank	Dr.	2,400	
	To Interest on Debenture Redemption Fund Investment A/c			2,400
	<u>(Receipt of interest on balance ₹40,000 Port Trust Bonds for 6 months at 12% p.a.)</u>			
“	Interest on Debenture Redemption Fund Investment A/c	Dr.	5,600	
	To Debenture Redemption Fund A/c			5,600
	<u>(Transfer of interest received on investment to Debenture Redemption Fund Account)</u>			
“	Profit and Loss Appropriation A/c	Dr.	5,800	
	To Debenture Redemption Fund A/c			5,800
	<u>(Transfer of annual profits to Debenture Redemption Fund A/c)</u>			
“	Debenture Redemption Fund Investment (Own Debentures) A/c	Dr.	19,000	
	To Bank			19,000
	<u>(Investment of current year's instalment plus interest received on investment by purchase of 200 own debentures @ ₹95)</u>			

“	Profit and Loss A/c To Debenture Interest A/c (Transfer of Debenture Interest to Profit and Loss A/c)	Dr.	24,000	
“	Debenture Redemption Fund A/c To Capital Reserve (Transfer of profit on sale of investments)	Dr.	667	24,000  667

**Ledger Accounts**  
**Debenture Redemption Fund Account**

<i>Dr.</i>		<i>Cr.</i>
<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To Capital Reserve (Profit on sale)	667
“	To Balance c/d	1,19,000
	<u>1,19,667</u>	
1.4.2010	By Balance b/d	1,00,000
1.8.2010	“ Debenture Redemption Fund Investment (Bond) A/c	667
30.9.2010	“ Debenture Interest A/c (Interest on Own Debentures)	3,400
31.3.2011	“ Debenture Interest A/c (Interest on Own Debentures)	4,200
“	“ Interest on Debenture Redemption Fund Investment A/c	5,600
“	“ Profit and Loss Appropriation A/c	<u>5,800</u>
1.4.2011	“ Balance b/d	<u>1,19,667</u> 1,19,667

**6% Debentures Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To Balance c/d	<u>2,00,000</u> <u>2,00,000</u>	1.4.2010	By Balance b/d	<u>2,00,000</u> <u>2,00,000</u>
			1.4.2011	By Balance b/d	2,00,000

**Debenture Redemption Fund Investment  
(Port Trust Bonds) Account**

<i>Dr.</i>		<i>Cr.</i>
<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.4.2010	To Balance b/d (face value 60,000)	55,000
1.8.2010	To Debenture Redemp- tion Fund A/c	36,667
1.8.2010	By Bank (face value 20,000)	19,000
31.3.2011	By Balance c/d (face value 40,000)	36,667

		(Profit on sale)	<u>667</u>			
			<u>55,667</u>			<u>55,667</u>
1.4.2011	To	Balance b/d	36,667			

**Debenture Redemption Fund Investment  
(Own Debentures) Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.4.2010	To Balance b/d (face value 50,000)	45,000	31.3.2008	By Balance c/d (face value 90,000)	83,000
1.8.2010	To Bank (face value 20,000)	19,000			
31.3.2011	To Bank (face value 20,000)	19,000			
		<u>83,000</u>			<u>83,000</u>
1.4.2011	To Balance b/d	83,000			

**Interest on Debenture Redemption Fund Investment Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To Debenture Re- demption Fund A/c	5,600	1.8.2010	By Bank (on ₹ 20,000 for 4 months)	800
			30.9.2010	“ Bank (on ₹ 40,000 for 6 months)	2,400
			31.3.2011	“ Bank (on ₹ 40,000 for 6 months)	2,400
		<u>5,600</u>			<u>5,600</u>

**Debenture Interest Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.8.2010	To Bank	800	31.3.2011	By Profit and Loss A/c	24,000
30.9.2010	“ Deb. Red. Fund A/c	3,400			
30.9.2010	“ Debentureholders (Interest) A/c	7,800			
31.3.2011	“ Deb. Red. Fund A/c	4,200			
“ ”	“ Debentureholders (Interest) A/c	<u>7,800</u>			
		<u>24,000</u>			<u>24,000</u>

**Balance Sheet of Confident Ltd. as at 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Reserves and Surplus:</i>		<i>Investments:</i>	
Capital Reserve	667	Debenture Redemption	
Debenture Redemption		Fund Investment A/c:	
Fund Account	1,19,000	Port Trust Bonds	
<i>Secured Loan:</i>		(Face Value ₹40,000)	36,667
12% Debentures -		Own Debentures	
2,000 Debentures of ₹100		(Face value ₹90,000)	83,000
each fully paid-up	2,00,000		

**Working Notes:**

1. Sale proceeds of ₹20,000 Port Trust Bonds:

$$₹20,000 \times \frac{95}{100} = ₹19,000$$

2. Interest accrued on ₹20,000 Port Trust Bonds sold for the expired period of 4 months (i.e., April to July) at 12%

$$= \left( ₹ 20,000 \times \frac{12}{100} \times \frac{4}{12} \right) = ₹800$$

3. Profit on sale of 200 Port Trust Bonds: Purchase price of ₹20,000 Port Trust Bonds

$$\frac{₹ 55,000}{60,000} \times 20,000 = ₹18,333$$

Sale proceeds of Port Trust Bonds = ₹19,000

∴ Profit on sale of Port Trust Bonds = ₹ (19,000 - 18,333) = ₹667

4. Cost of 200 Own Debentures purchased on 1st August = 200 x ₹97 = ₹19,400 which includes interest for expired period of 4 months (i.e., April to July) amount to

$$= \left( 20,000 \times \frac{12}{100} \times \frac{4}{12} \right) = ₹800$$

Actual cost price of 200 debentures = ₹ (19,400 - 400) = ₹19,000

5. Sinking Fund invested on 31.3.2008 = Annual appropriation of Profit + Interest on Investments of ₹1,10,000 (face value) at 12% p.a. i.e. ₹ (5,800 + 13,200) = ₹19,000.

6. Face value of Debentures purchased = ₹19,000 x  $\frac{100}{95}$  = ₹20,000

**Illustration 22** (Cancellation of Own Debentures on a subsequent date where Sinking Fund exists).

Continuing Illustration No. 21 if Own Debentures held by the company are cancelled on 31st March, 2011, show the necessary journal entries on cancellation and the effect of the same in the Balance Sheet of the Company.

**Solution:**

In addition to the entries made in Illustration No. 21 above, the following entries are required to be passed in the books of the company on cancellation of its own debentures:

**Journal Entries**

<i>Date</i>	<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
2011			
Mar. 31	12% Debentures A/c Dr. To Debenture Redemption Fund Investment (Own Debentures) A/c To Profit on Redemption of Debentures A/c  (Cancellation of 900 12% Debentures of ₹100 each purchased by the company at a cost of ₹83,000 resulting into a gain of ₹7,000)	90,000  83,000	   7,000
"	Profit on Redemption of Debentures A/c Dr. To Debenture Redemption Fund A/c  (Transfer of capital profit resulting from cancellation of own debentures to Debenture Redemption Fund Account)	7,000	7,000
"	Debentures Redemption Fund Account Dr. To General Reserve A/c To Capital Reserve  (Transfer of nominal value of debentures, cancelled during the year to General Reserve A/c and capital profit to Capital Reserve out of Debenture Redemption Fund Account)	97,667	90,000 7,667

**Ledger Accounts**  
**12% Debentures Account**

<i>Dr.</i>		<i>Cr.</i>			
<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To Debenture Redemption Fund Investment (Own Debentures) A/c	83,000	1.4.2010	By Balance b/d	2,00,000
"	" Profit on Redemption of Debentures A/c	7,000			
"	" Balance c/d	<u>1,10,000</u>			
		<u>2,00,000</u>			
			1.4.2011	By Balance b/d	<u>1,10,000</u>

**Debenture Redemption Fund Investment (Own Debentures) Account**

<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
1.4.2010	To Balance b/d (face value ₹ 50,000)	45,000	31.3.2011	By 12% Debentures A/c	83,000
1.8.2010	To Bank (face value ₹ 20,000)	19,000			
31.3.2011	To Bank (face value ₹ 20,000)	19,000			
		<u>83,000</u>			<u>83,000</u>

**Debenture Redemption Fund Account**

<i>Dr.</i>			<i>Cr.</i>		
<i>Date</i>	<i>Particulars</i>	<i>₹</i>	<i>Date</i>	<i>Particulars</i>	<i>₹</i>
31.3.2011	To General Reserve A/c	90,000	1.4.2010	By Balance b/d	1,00,000
	“ Capital Reserve A/c	7,667	1.8.2010	” Debenture Redemption Fund Investment (Bond) A/c	667
	“ Balance c/d	29,000	30.9.2010	“ Debenture Interest A/c (Interest on Own Debentures)	3,400
			31.3.2011	“ Debenture Interest A/c (Interest on Own Debentures)	4,200
			“	” Interest on Debenture Redemption Invest- ment A/c	5,600
			“	” Profit on Redemption of Debentures A/c	7,000
			“	” Profit and Loss Appropriation A/c	<u>5,800</u>
		<u>1,26,667</u>			<u>1,26,667</u>
			1.4.2011	By Balance b/d	29,000

**Balance Sheet of Confident Ltd. as at 31st March, 2011**

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
<i>Reserve and Surplus:</i>		<i>Investments</i>	
Capital Reserve	7,667	Debenture Redemption	
General Reserve	90,000	Fund Investment A/c:	
Debenture Redemption		Post Trust Bonds	
Fund Account	29,000	(Face value ₹ 40,000)	36,667
<i>Secured Loan:</i>			
12% 1,100 Debentures			
of ₹ 100 each fully paid-up	1,10,000		

## 25. CONVERSION OF DEBENTURES INTO SHARES

According to the terms of issue of the debentures, the debentureholders may be given the right to exercise the option to convert their debentures into equity shares or preference shares at a stipulated rate within a specified period. If the debentureholders find the offer is beneficial to them, they will exercise their right and opt for shares, otherwise they may not exercise their right.

Although the Companies Act, 1956, does not prohibit such conversion of debentures into shares, it has to be carefully noted that the provisions of Section 79 are not violated in process of conversion. In such a case, the actual proceeds of the issue of debentures should be considered in determining the number of shares to be issued in exchange of the debentures to be converted. That is to say, even the debentures originally issued at a discount can be converted in determining the number of shares to be issued. Thus, the issue price of the shares must be equal to the amount actually received from the debentureholders at the time of issue of those debentures. Otherwise the provisions of Section 79 would be violated, because shares cannot be issued at a discount except as provided in Section 79.

For example, X Ltd. issued 12% Debentures at a discount of 10% and the debentureholders were given the right to exercise the option of converting the debentures into 14% Preference Shares of ₹100 each to be issued at a premium of 10%. The holders of ₹33,000 debentures expressed their willingness to exercise the option. In such a case, the number of preference shares to be issued in exchange of ₹33,000 debentures will be calculated in the following way:

Face value of debentures to be converted	=	₹ 33,000
Less: Discount allowed @ 10% on issue	=	<u>3,300</u>
Actual amount received on issue of the debentures	=	<u>29,700</u>

Now, the issue price of preference shares will be as follows:

Face value of preference shares	100
Add: Premium @ 10%	<u>10</u>
	<u>110</u>

Therefore, number of preference shares to be issued in exchange of ₹ 33,000 debentures = ₹ 29,700/110 = 270

Thus, face value of 270 preference shares	27,000
Add: premium @ 10%	<u>2,700</u>
	<u>29,700</u>

In case, the debentures are due for redemption, conversion of debentures into shares, may be made on the basis of terms and conditions mutually agreed upon at the time of redemption. In such a case, even debentures originally issued at a discount can be converted into shares on the basis of the nominal value of the debentures, and provisions of Section 79 should not be regarded as violated.

### Accounting Entry for Conversion

At the time of conversion, new shares can be issued at par or at a premium or at a discount. The accounting entry for all these cases will be as follows:

*1. If shares are issued at par*

Debentures A/c	Dr.	with the nominal value of the debentures converted
To Share Capital Account		with the nominal amount of shares issued

*2. If shares are issued at a premium*

Debentures A/c	Dr.	with the nominal value of the debentures converted
To Share Capital Account		with the nominal amount of shares issued
To Securities Premium Account		with the difference

*If shares are issued at a discount -*

Debentures A/c	Dr.	with the nominal value of the debentures to be converted
Discount on Issue of Shares A/c	Dr.	with the discount on issue of shares
To Share Capital Account		with the total

**Note:** If the debentures to be converted were issued at a discount, Share Capital A/c should be credited with the amount of cash originally realised on the debentures and Discount on Issue of Debentures A/c should be credited with the amount of discount allowed on those debentures.

### Illustration 23

On 1st April, 2010, Green Ltd. issued 2500 12% Debentures of ₹ 100 each at ₹ 95. Holders of these debentures have an option to convert their holdings into 14% Preference Shares of ₹ 100 each at a Premium of ₹ 25 per share at any time within three years.

On 31st March, 2011, holders of 500 Debentures notified their intention to exercise the option.

Show the journal entries relating to the issue and conversion of debentures in the books of the company. Also show how the items affected would appear in the company's balance sheet.

**Solution:****Journal Entries**

<i>Date</i>	<i>Particulars</i>		<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
2010				
April 1	Bank	Dr.	2,37,500	
	To 12% Debentures Application and Allotment A/c			2,37,500
	(Receipt of application money on 2,500 debentures @ ₹95 each)			
"	12% Debentures Application and Allotment A/c	Dr.	2,37,500	
	Discount on Issue of Debentures A/c	Dr.	12,500	
	To 12% Debentures A/c			2,50,000
	(Allotment of 2,500 debentures of ₹100 each issued at a discount of ₹5 each as per Board's resolution dated....)			
2011				
Mar. 31	12% Debentures A/c	Dr.	50,000	
	To Discount on Issue of Debentures A/c			2,500
	To 14% Preference Share Capital A/c			38,000
	To Securities Premium A/c			9,500
	(Conversion of 500 Debentures of ₹100 each issued at a discount of ₹5 each for 380 14% Preference Shares of ₹100 each at a premium of ₹25 each as per Board's resolution dated....)			

**Balance Sheet of Green Ltd. as at 31st March, 2011**

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
<i>Share Capital:</i>		...	...
Authorised Capital	—	...	...
Issued Subscribed and Paid-up Capital:		<i>Miscellaneous</i>	
14% Preference Shares Capital - 380 shares of ₹100 each	38,000	<i>Expenditure:</i>	
		Discount on issue of Debentures Account	10,000
<i>Reserve and Surplus:</i>			
Securities Premium Account	9,500		

*Secured loan:*

2,000 12% Debentures of  
₹100 each fully paid-up                      2,00,000

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**Working Notes:**

Number of 14% Preference Shares has been arrived at as follows:

	₹
Amount received on issue of 500 debentures (500 x ₹ 100)	50,000
Less: Discount allowed on 500 debentures (500 x ₹ 5)	<u>2,500</u>
Amount actually received	<u>47,500</u>
Issue Price of 14% Preference Shares:	
Face value per share	100
Add: Premium per share	<u>25</u>
Issue price	<u>125</u>

Therefore the number of preference shares issued in exchange of ₹ 50,000 debentures

$$= 47,500/125 = 380$$

$$\text{Preference Share Capital} = ₹ 380 \times 100 = ₹ 38,000$$

$$\text{Securities Premium} = 380 \times ₹ 25 = ₹ 9,500.$$

**Note:** Whether debentures were issued at discount or at premium becomes irrelevant if conversion into shares takes place at the time of redemption of debenture is due. Suppose in 2006 ₹ 10,00,000 debentures were issued at a discount of 5% with a term of 6 years. If in 2011, when the redemption is due, debentureholders are allowed to convert the debentures into shares, the relevant amount will be the face value of the debentures (or rather the figure at which they are to be redeemed). If shares are to be issued at par, debentureholders will get shares equal to par value with the amount of the debentures to be converted.

**Illustration 24**

The summarised balance sheet of Swathi Ltd. as on 31st March, 2011 stood as follows:

<i>Liabilities:</i>	₹
Share Capital	
50,000 shares of ₹10 each	5,00,000
General reserve	7,50,000
Debenture Redemption Fund	5,00,000
12% Convertible debentures	
10,000 debentures of ₹100 each	10,00,000
Unsecured Loan	5,00,000
Current liabilities	<u>12,50,000</u>
	<u>45,00,000</u>

**Assets:**

Net fixed assets	18,00,000
Debenture Redemption fund investment	4,00,000
Cash at bank	5,00,000
Other current assets	<u>18,00,000</u>
	<u>45,00,000</u>

The debentures are due for redemption on 1st April, 2011. According to the terms of issue of debentures, they were redeemable at a premium of 5% and also conferred option to the debentureholders to convert 20% of their holdings into equity shares at a predetermined price of ₹ 15.75 per share and the payment in cash.

Assuming that:

- (i) Except for 100 debentureholders holding 2,500 debentures, the rest of them exercised the option for maximum conversion.
- (ii) The investments realise ₹ 4,40,000 on sale and
- (iii) All transactions are put through, on 1st April, 2011.

You are required to redraft the balance sheet of the company as on 1st April, 2011 after giving effect to the redemption. Also show the number of equity shares to be allotted and the cash payment necessary.

**Solution:****Working notes:**

- (i) Calculation of number of shares to be allotted:

Total number of debentures	10,000
Less: Numbers not opting for conversion	<u>2,500</u>
	<u>7,500</u>
20% thereof	1,500
Amount paid for 1,500 debentures i.e. 1500 x @ 105	<u>1,57,500</u>
Number of equity shares to be allotted:	
$1,57,500/15.75 = 10,000$ shares of ₹ 10 each.	

- (ii) Calculation of cash to be paid:

Number of debentures	10,000
Less: Number of debentures to be converted into equity shares	<u>1,500</u>
Number of debentures to be redeemed	8,500
Redemption value = 8,500 x ₹ 105 = ₹ 8,92,500.	

## (iii) Cash at Bank:

Cash balance	5,00,000
Add: Sale of investment	<u>4,40,000</u>
	9,40,000
Less: Cash paid to debenture holders	<u>8,92,500</u>
	<u>47,500</u>

## (iv) Calculation of General Reserve:

Opening of balance	7,50,000
Debenture Redemption Fund (transfer)	<u>5,00,000</u>
	<u>12,50,000</u>

## (v) Securities Premium:

Issue of shares on conversion	57,500
Less: Premium on Redemption of Debentures	<u>50,000</u>
	<u>7,500</u>

**Swathi Ltd.**  
**Balance Sheet as on 1st April, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		Fixed Assets (net)	18,00,000
60,000 shares of ₹10 each	6,00,000	<i>Current Assets,</i>	
<i>Reserve and Surplus:</i>		<i>Loans and Advances:</i>	
Capital reserve	40,000	Other current assets	18,00,000
General reserve	12,50,000	Cash at bank	47,500
Securities premium	7,500		
Unsecured loans	5,00,000		
Current liabilities	<u>12,50,000</u>		
	<u>36,47,500</u>		<u>36,47,500</u>

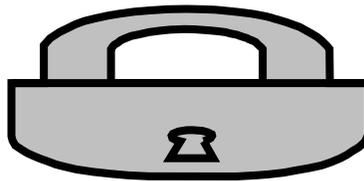
**LESSON ROUND UP**



- Debentures may be issued at par, or at a premium, or at a discount.
- Debentures may be issued by a company for cash, for consideration other than cash, and as collateral security.
- The issue of debentures to vendors is known as issue of debentures for consideration other than cash.

- The term „Collateral Security’ implies additional security given for a loan. When a company takes a loan from bank or insurance company, it may issue its own debentures to the lender as collateral security against the loan in addition to any other security that may be offered, such an issue of debentures is known as “Debentures Issued as Collateral Security.
- A company may issue debentures on any specific condition as to its redemption such as: issued at par and redeemable at par, issued at discount redeemable at par, issued at premium redeemable at par, issued at par redeemable at premium, issued at discount, but redeemable at premium.
- When a company issues debentures it undertakes to pay interest thereon at a fixed percentage. The payment of interest on the debt is obligatory on the part of the company issuing them irrespective of the fact whether the company earns profit or not and the interest payable on debentures is a charge against the profits of the company.
- Discount on issue of debentures is a capital loss of the company and it is required to be shown on the assets side of the Balance Sheet under the heading “Miscellaneous Expenditure” until it is written off.
- When a company issues debentures at par or at a discount which are redeemable at a premium, the premium payable on redemption of the debentures is be treated as capital loss.
- Redemption of debentures refers to the discharge of the liability in respect of the debentures issued by a company. Debentures can be redeemed at any time either at par or at a premium or at a discount.
- Debentures may be redeemed by way of : annual drawings, payment in one lump sum at the expiry of a specified period or at the option of the company at a date within such specified period, purchase of debentures in the open market and conversion into shares.
- Interest on debentures is generally paid half-yearly to the holders on certain specified dates. If the purchase price for the debentures includes interest for the expired period, the quotation is said to be “Cum-interest”, on the other hand, the purchase price for the debentures excludes the interest for the expired period, the quotation is said to be “Ex-interest”.

### SELF TEST QUESTIONS



1. In April 2006, a company issues 13% ₹20, 00,000 debentures at ₹96 but redeemable at ₹103. Redemption will be carried out by annual drawings of ₹4 lacs (face value) commencing at the end of March 2011. What do you recommend as the amount to be charged to the profit and loss account, apart from that of interest?

*[Ans.: ₹20,000 p.a. from March 2007 to March 2011, ₹16,000 in March 2012, ₹12,000 in March 2013, ₹8,000 in March 2014, ₹4,000 March in 2015].*

2. ₹40 lakhs 10% debentures are outstanding in the balance sheet of a company on 31st March, 2010. The company had not paid the six months interest after 30th June, 2010. State the amount of interest on debentures accrued and due as well as interest accrued but not due on 31st March, 2011.

*[Ans.: Interest accrued and due ₹2,00,000;  
Interest accrued but not due ₹1,00,000].*

3. Calculate the amount of discount to be written off each year on the debentures of ₹60,00,000 issued on 1.1.2011 at a discount of 5% repayable in annual drawings of ₹10,00,000 each year. Accounting period ends on 31st December.

*[Ans.: Ratio - 6 : 5 : 4 : 3 : 2 : 1; Discount Amount : I - ₹85,714;  
II - ₹71,429; III - ₹57,143; IV - ₹42,857;  
V - ₹28,571 and VI - ₹14,286].*

4. (a) A company issues 11% ₹10,00,000 Debentures, repayable at the end of 10 years at a premium of 5%. It decides to establish a sinking fund to take care of the redemption. Investments in readily marketable securities yield 6% per annum. Sinking Fund Table shows that ₹0.075868 annually is required to produce ₹1 at the end of 10 years @ 6%. What is the annual amount that has to be set aside and what account will be debited for credit to the Sinking Fund (Debenture Redemption Fund) A/c?
- (b) If investments are made to the nearest ₹100, how much will be invested at the end of the 3rd year in the above case?

*[Ans.: (a) ₹79,661.40, debit Profit & Loss  
Appropriation A/c; (b) ₹89,500].*

5. (a) Wye Ltd. has 12% ₹10,00,000 Debentures at issue. For the purpose of redemption it maintains a Debenture Redemption Fund with an annual contribution of ₹90,000. On 1st April, 2010 the Fund stood at ₹4,50,000 represented by 6% ₹5,00,000 Government Loan. At what figure would the Debenture Redemption Fund stand at the end of March 2011?
- (b) In the above case, on 1st April, 2011, ₹1,00,000 Government Loans was sold @ 93.50 and the proceeds were, utilised to purchase debentures for cancellation @ 85. What is the amount of debentures, face value, that has been cancelled.

*[Ans.: (a) ₹5,40,000; (b) ₹1,10,000].*

6. (a) Zed Ltd. shows in its balance sheet 9% ₹30,00,000 Debentures; interest on these is payable on 31st March and 30th September. On 1st June, 2010 the company purchased as investment ₹50,000 of the debentures @ 89. What is the profit accruing to the company as a result?
- (b) Continuing the above, at what figure will the debentures appear in the balance sheet?

*[Ans.: (a) Nil; (b) Liabilities side: ₹30,00,000; Assets Side; ₹44,500  
(Own Deb. Ex-interest) Cum-interest ₹43,750 (₹44,500 - 750)].*

7. (a) Exe Ltd. purchased its own 12% Debentures (interest payable on 30<sup>th</sup> September and 31st March) as Sinking Fund Investment as shown below:

(1) 1st August, 2010 ₹60,000 @ 94.

(2) 31st December, 2010 ₹40,000 @ 95 cum-interest.

The total amount of debentures outstanding on 1st April, 2010 was ₹10,00,000. How much will be credited to the Sinking Fund in 2010-01 by way of interest resulting from the above two transactions?

- (b) On 31st March, 2011 at what figure the investment in Own Debentures stand in the above case? **[Ans.: (a) ₹6,000 (b) 93,200].**

8. Ess Ltd. pays interest on its 12% Debentures on 30th September and 31st March. To redeem the debentures it has maintained a sinking fund which stood on 31st December, 2010 at ₹2,70,000 represented by 6% Government Loan of the nominal value of ₹3,00,000 (interest payable on the same dates as for debentures).

On 1st January, 2011, the company purchased ₹1,00,000 of its debentures @ 96, raising the necessary funds by selling Government Loan @ 92.5 (to the nearest ₹100). What is the nominal value of the Govt. Loan sold and what is the profit/loss on the sale?

(Hint: Every ₹100 of Debentures requires ₹99 i.e. ₹96 plus ₹3 for interest. Every ₹100 of Government Loan will yield ₹94 i.e. the price stated plus ₹1.50 interest for 3 months).

**[Ans.: ₹1,05,300; Profit ₹2,632.5].**

9. P. Ltd. issued ₹10,00,000 13.5% Debentures at a discount of 5%; the debentureholders have an option of converting the amount into ₹10 equity shares at a premium of 10%. A debentureholder holding ₹40,000 debentures wishes to exercise the option. How many shares will he get?

**[Ans.: 3,454].**

10. In 2001 Gee Ltd. issued 10% ₹20,00,000 debentures at a discount of 10%; the debentures were redeemable in 2011. In 2011 the company gave the debentureholders the option of converting the debentures into equity shares at a premium of 25%. One debentureholder holding ₹1,00,000 Debentures wants to exercise the option. What is the face value of the shares that he will get?

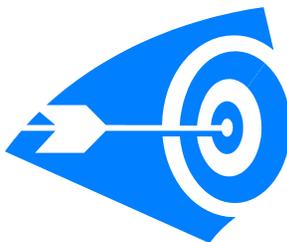
**[Ans.: ₹80,000].**

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## STUDY IV

### UNDERWRITING OF ISSUES AND ACQUISITION OF BUSINESS

#### LEARNING OBJECTIVES



After studying this Study Lesson you will be able to:

- Understand the meaning of underwriting.
- Familiarize with various types of underwriting.
- Distinguish between marked application and unmarked applications.
- Determine the liability of underwriters.
- Explain the accounting procedure on acquisition of business.
- Understand profit or loss prior to incorporation.
- Ascertain profit or loss prior to incorporation.
- Understand the accounting treatment of preliminary expenses.

#### 1. UNDERWRITING AGREEMENT

Underwriting may be defined as a contract entered into by the company with persons or institutions, called underwriters, who undertake to take up the whole or a portion of such of the offered shares or debentures as may not be subscribed for by the public, in consideration of remuneration called underwriting commission. Thus, underwriting is an undertaking or guarantee given by the underwriters to the company that the shares or debentures offered to the public will be subscribed for in full. In case, the public response is poor, the underwriters will have to take up the balance of the shares or debentures not subscribed for by the public and to pay for them. Thus, the underwriters take over the risk of uncertainty of a public issue of shares or debentures of a company and the company is assured of the success of the issue.

#### 2. UNDERWRITERS AND BROKERS

The persons or institutions underwriting a public issue of shares or debentures are called Underwriters. The underwriters may be individuals, partnership firms or joint stock companies. But, an issue of shares or debentures is hardly underwritten by a single individual as it involves more risk and attaches greater responsibility. Generally, an issue of shares or debentures of a company is underwritten by two or more firms jointly. Some specialised financial institutions set up by the Government

in the public sector are also playing an active role these days in underwriting shares or debentures of a company.

Brokers merely promise or try to procure subscriptions to the shares or debentures issued; they do not take any responsibility of subscribing to the shares or debentures of the company. They simply procure subscriptions for shares or debentures from the public on behalf of the company and in exchange of their service rendered to the company, they get remuneration called brokerage.

### **3. TYPES OF UNDERWRITING**

An underwriting agreement may be of any one of the following types:

#### **3.1 Complete Underwriting**

If the whole of the issue of shares or debentures of a company is underwritten, it is said to be complete underwriting. In such a case, the whole of the issue of shares or debentures may be underwritten by -

- (a) one firm or institution, agreeing to take the entire risk;
- (b) a number of firms or institutions, each agreeing to take risk only to a limited extent.

#### **3.2 Partial Underwriting**

If only a part of the issue of shares or debentures of a company is underwritten, it is said to be partial underwriting. The part of the issue of shares or debentures may be underwritten by -

- (a) one person or institution;
- (b) a number of firms or institutions each agreeing to take risk only to a limited extent.

In case of partial underwriting, the company is treated as "Underwriter" for the remaining part of the issue.

#### **3.3 Firm Underwriting**

It refers to a definite commitment by the underwriter or underwriters to take up a specified number of shares or debentures of a company irrespective of the number of shares or debentures subscribed for by the public. In such a case, the underwriters are committed to take up the agreed number of shares or debentures in addition to unsubscribed shares or debentures, if any. Even if the issue is over-subscribed, the underwriters are liable to take up the agreed number of shares or debentures.

### **4. UNDERWRITING COMMISSION**

The consideration payable to the underwriters for underwriting the issue of shares or debentures of a company is called underwriting commission. Such a commission is paid at a specified rate on the issue price of the whole of the shares or debentures underwritten whether or not the underwriters are called upon to take up any shares or debentures. Thus, the underwriters are paid for the risk they bear in the placing of shares before the public. Underwriting commission may be in addition to brokerage.

## 5. PAYMENT OF UNDERWRITING COMMISSION

Section 76 of the Companies Act lays down certain conditions relating to the payment of underwriting commission which must be complied with. Section 76(1) states that a company may pay a commission to any person in consideration of:

- (a) his subscribing or agreeing to subscribe, whether absolutely or conditionally, for any shares in or debentures of the company, or
- (b) his procuring or agreeing to procure subscription whether absolute or conditional for any shares in or debentures of the company, if the following conditions are fulfilled:
  - (i) the payment of the commission is authorised by the articles;
  - (ii) the commission paid or agreed to be paid does not exceed in the case of shares, 5% of the price at which the shares are issued or the amount or rate authorised by the Articles, whichever is less and in the case of debentures, 2-1/2% of the price at which the debentures are issued or the amount or rate authorised by the Articles, whichever is less;
  - (iii) the amount or rate of commission should be disclosed in the prospectus or statement in lieu of prospectus as the case may be or in a statement filed with the Registrar before the payment of the commission;
  - (iv) the number of shares or debentures which persons have agreed to subscribe absolutely or conditionally should be disclosed in the prospectus;
  - (v) a copy of the contract relating to the payment of the commission should be delivered to the Registrar;
  - (vi) no underwriting commission can be paid if the issue is privately placed, in other words, underwriting commission is payable only on such shares or debentures as are offered to the general public [Section 76(4A)].

The law limits the commission in case of issue of shares to 5% (or a lower rate if the Articles so state) of the issue price of shares and in case of debentures to 2.5% or such lower rate as is provided in the Articles.

## 6. MARKED AND UNMARKED APPLICATIONS

When the issue of shares or debentures of a company is underwritten by two or more persons, it is usual that the applications for shares or debentures sent through the underwriters should bear a stamp of the respective underwriters. Otherwise, it would be very difficult for the company to determine how many applications have been received through a particular underwriter and, unless this is determined properly, the company would face a problem in determining the liability of the individual underwriters. Thus, the applications bearing the stamp of the respective underwriters are called "Marked Applications" while the applications received directly by the company which do not bear any stamp of the underwriters are called "Unmarked Applications".

If the entire issue of shares or debentures is underwritten by only one underwriter, the marking of applications is immaterial since he is to get credit of all the applications whether sent through him or received directly in determining his

liability. But, the issue of shares or debentures is, generally, underwritten by more than one underwriter as the risk is distributed among the underwriters in an agreed ratio. In such a case, it is essential that the applications sent through the underwriters should be marked properly so as to determine their respective liability correctly.

## 7. DETERMINING THE LIABILITY OF UNDERWRITERS

The liability of the underwriter or underwriters would be determined in the following ways:

### 7.1 Complete Underwriting

- (a) *If the whole of the issue of shares or debentures is underwritten only by one underwriter:* In such a case, the underwriter will be liable to take up all the shares or debentures that have not been subscribed for by the public. For determining his liability, it is not material to know how many applications are sent through him and how many applications are received directly by the company. Thus, the liability of the underwriter in such a case will be as follows:

Liability = Shares or debentures offered – Total applications received.

It is to be noted here that if the shares or debentures are over subscribed or fully subscribed by the public, the underwriter is free from his liability and cannot be called upon to take up any shares or debentures of the company. But he will be entitled to get his commission on the total issue price of the shares or debentures. He must of course take up the shares or debentures as per "Firm Underwriting". Automatically, this will reduce his liability in case there is under subscription.

- (b) *If the whole of the issue of shares or debentures is underwritten by a number of underwriters in an agreed ratio:* In such a case, the liability of the respective underwriters can be determined as follows:

The gross liability of each underwriter according to the agreed ratio should be reduced first by the marked applications and then credit may be given in respect of unmarked applications sent directly to the company by way of deduction from the balance left in the ratio of their gross liability. Thus, the liability of each underwriter in such a case will be as follows:

Gross liability according to the agreed ratio	.....
Less: Marked applications	.....
	_____
Balance left	.....
Less: Unmarked applications in the ratio of gross liability	.....
Net liability	.....

Sometimes credit to unmarked application is given in the ratio of gross liability as reduced by the marked applications. The individual liability calculated in this way will differ from the liability calculated as per the earlier procedure.

**N.B.:** In case some figure is in minus then transfer that figure to other underwriters' account in the ratio of gross liability inter se. This gives the liability of underwriters on account of short fall in the public subscription.

### Illustration 1

Sunflow Ltd. issued 50,000 equity shares. The whole of the issue was underwritten as follows:

Red 40%; White 30%; Blue 30%

Applications for 40,000 shares were received in all, out of which applications for 10,000 shares had the stamp of Red; those for 5,000 shares that of White and those for 10,000 shares that of Blue. The remaining applications for 15,000 shares did not bear any stamp.

Determine the liability of the underwriters.

### Solution:

<b>Net Liability of Underwriters</b>			
	<i>Red</i> (40%) Shares	<i>White</i> (30%) Shares	<i>Blue</i> (30%) Shares
Gross liability in the agreed ratio of 40 : 30 : 30	20,000	15,000	15,000
Less: Marked applications	<u>10,000</u>	<u>5,000</u>	<u>10,000</u>
Balance left	10,000	10,000	5,000
Less: Unmarked applications in the ratio of gross liability, i.e., 40 : 30 : 30	<u>6,000</u>	<u>4,500</u>	<u>4,500</u>
Net liability	<u>4,000</u>	<u>5,500</u>	<u>500</u>

### 7.2 Partial Underwriting

(a) *If a part of the issue of shares or debentures is underwritten only by one underwriter:* In such a case, only a part of the whole issue, say 60% or 70% is underwritten only by one underwriter and so far as the balance 40% or 30% of the issue is concerned, the company itself is said to have underwritten the same. As such, the unmarked applications are treated as marked as far as the company is concerned.

In such a case, the gross liability of the underwriter will be that part of the issue of shares or debentures which is underwritten, say 60% or 70% and the net liability will be determined by deducting the marked applications (the applications sent through him) from the gross liability. Thus, the net liability will be determined as follows:

Net liability = Gross liability (say 60% or 70% of the issue) – Marked applications.

It is to be noted here that if the marked applications exceed or equal the number

of shares or debentures underwritten the underwriter is free from his liability and cannot be called upon to take up any shares or debentures of the company. Similarly, if all the shares or debentures are subscribed the underwriter is free from his liability in spite of the fact the marked applications are less than the number of shares or debentures underwritten.

### Illustration 2

Monlit Ltd., issued 50,000 equity, shares of which only 60% was underwritten by Green. Applications for 45,000 shares were received in all out of which application for 26,000 were marked.

Determine the liability of Green.

#### Solution:

Gross liability of Green being 60% of 50,000 shares, i.e., $60/100 \times 50,000$	= 30,000 shares
Less: Marked applications	= <u>26,000</u> shares
Net liability of Green	= <u>4,000</u> shares

**Notes:** (1) If the marked applications were for 30,000 shares or more, Green would have had no liability at all.

(2) If the applications received by the company were for all the 50,000 shares, Green would have no liability at all even though the marked applications were for 26,000 shares.

(3) If the applications received by the company were for 48,000 shares, Green's liability would have been restricted to  $(50,000 - 48,000) = 2,000$  shares, even though the marked applications were for 26,000 shares.

Sometimes, it may so happen that the information as to the marked applications and unmarked applications may not be given in the problem. In such a case, it has to be assumed that out of the total applications received by the company, the number of applications proportionate to that part of the issue underwritten have been received through the underwriters.

### Illustration 3

Goods Earths Ltd., issued 30,000 6% Debentures of 100 each. 60% of the issue was underwritten by Black. Applications for 28,000 debentures were by the company.

Determine the liability of Black.

#### Solution:

Gross liability of Black being 60% of 30,000 debentures i.e., $60/100 \times 30,000$	= 18,000 debentures
Less: Marked applications assumed 60% of 28,000 i.e., $60/100 \times 28,000$	= <u>16,800</u> debentures
Net liability of Black	= <u>1,200</u> debentures

Alternatively, Black's liability can be determined in the following way:

Number of debentures not subscribed for by the public = (30,000 – 28,000)  
= 2,000 debentures

Black's liability = 60% of 2,000 debentures  
=  $60/100 \times 2,000 = 1,200$  debentures

(b) *If the part of the issue of shares or debentures is underwritten by a number of underwriters:* In such a case only a part of the whole issue, say 60% or 70% or 80% is underwritten by a number of underwriters and so far as the balance 40% or 30% or 20% is concerned, the company itself is said to have underwritten the same. As such, the unmarked applications are treated as marked so far as the company is concerned.

In such a case, the method of determining the net liability of the respective underwriters is similar to the method discussed (a) above.

#### Illustration 4

Satellite Ltd., issued 12% 10,000 Preference Shares of ₹ 10 each. The issue was underwritten as follows:

Apple 30%, Mango 30%, Orange 20%.

Application for 8,000 shares were received by the company in all. Determine the liability of the respective underwriters.

#### Solution:

	<i>Apple</i> (30%) Shares	<i>Mango</i> (30%) Shares	<i>Orange</i> (20%) Shares
Gross liability in the agreed ratio or 30 : 30 : 20	3,000	3,000	2,000
Less: Marked application, i.e., 8,000 application in the ratio of 3/10 : 3/20 : 2/10	<u>2,400</u>	<u>2,400</u>	<u>1,600</u>
Net liability	<u>600</u>	<u>600</u>	<u>400</u>

Alternatively, the liability of the respective underwriters can also be determined in the following manner:

Shares issued	10,000
Less: Applications received	<u>8,000</u>
Unsubscribed shares	<u>2,000</u>

Apple's liability = 30% of 2,000 = 600 shares  
Mango's liability = 30% of 2,000 = 600 shares  
Orange's liability = 20% of 2,000 = 400 shares

Total liability of Apple, Mango and Orange  
 = 600 + 600 + 400 = 1,600 shares.

which represent 80% of the total issue underwritten. The balance (2,000 - 1,600) = 400 shares representing 20% of the issue not underwritten will remain as unissued.

### 7.3 Firm Underwriting

In the case of firm underwriting, the underwriters take up the agreed number of shares or debentures firm underwritten in addition to unsubscribed shares or debentures, if any. In such an instance, an underwriter is not allowed to set off his firm underwriting against his liability otherwise determined, that he will have to subscribe both for shares/debentures underwritten firm and for shares which he has to take under the underwriting contract, ignoring firm underwriting.

While computing the individual liability of the underwriters, the firm underwriting can be dealt with in any of the following manner in the absence of any specific instructions:

(a) The firm underwriting may be adjusted against the individual liability of each underwriter separately or may be treated at par with marked applications.

When firm underwriting is treated at par with marked applications	
In such a case, the statement of liability of underwriters will be as under:	
Gross Liability (agreed ratio-total shares underwritten)	.....
Less: Marked applications including firm underwriting	.....
Balance left	
Less: Unmarked application (ratio of gross liability)	.....
Net liability	
Add: Firm underwriting	.....
Total Liability	.....

(b) The benefit of firm underwriting may be shared by all underwriters or firm underwriting may be treated at par with unmarked applications. In such case, the shares/debentures underwritten firm will be included in the unmarked forms. In such case, the state of liability of underwriters will appear as shown above except that shares/debentures underwritten firm by each underwriter will not be specifically adjusted against his individual liability but will be included in the total unmarked forms to be distributed amongst all underwriters in the ratio of their gross liability.

**N.B.:** If the question is not specific regarding the treatment of firm underwriting students may follow any one of the treatments discussed above and a foot note to this effect may be given.

### Illustration 5

Emess Ltd. issued 40,000 shares which were underwritten as:

P: 24,000 shares Q: 10,000 shares and R: 6,000 shares. The underwriters made applications for firm underwriting as under:

P: 3,200 shares; Q: 1,200 shares; and R: 4,000 shares. The total subscriptions excluding firm underwriting (including marked applications) were 20,000 shares.

The marked applications were - P: 4,000 shares; Q: 8,000 shares; and R: 2,000 shares.

Prepare a statement showing the net liability of underwriters.

**Solution:**

**Statement of Underwriters' Liability**  
(Firm underwriting shares are treated as unmarked applications)

(Shares)

	<i>P</i>	<i>Q</i>	<i>R</i>	<i>Total</i>
Gross Liability	24,000	10,000	6,000	40,000
Less: Marked applications	<u>4,000</u>	<u>8,000</u>	<u>2,000</u>	<u>14,000</u>
Balance	20,000	2,000	4,000	26,000
Less: Unmarked applications in the ratio of gross liability (12:5:3)	<u>8,640</u>	<u>3,600</u>	<u>2,160</u>	<u>14,400</u>
Balance	11,360	(-1,600)	1,840	11,600
Credit of Q's over subscription to P & R in the ratio of 12:3	<u>1,280</u>	<u>+1,600</u>	<u>320</u>	<u>—</u>
Net Liability	10,080	—	1,520	11,600
Add: Firm underwriting	<u>3,200</u>	<u>1,200</u>	<u>4,000</u>	<u>8,400</u>
Total Liability	<u>13,280</u>	<u>1,200</u>	<u>5,520</u>	<u>20,000</u>

**Alternate Answer**

**Statement of Underwriters' Liability**  
(Firm underwriting shares are treated as marked applications)

(Shares)

	<i>P</i>	<i>Q</i>	<i>R</i>	<i>Total</i>
Gross Liability	24,000	10,000	6,000	40,000
Less: Unmarked applications 6,000 in ratio of gross liability (12:5:3)	<u>3,600</u>	<u>1,500</u>	<u>900</u>	<u>6,000</u>
Balance	20,400	8,500	5,100	34,000
Less: Marked application plus shares underwritten firm	<u>7,200</u>	<u>9,200</u>	<u>6,000</u>	<u>22,400</u>
Balance	13,200	- 700	- 900	11,600
Credit for Q's and R's oversubscription	<u>- 1,600</u>	<u>+700</u>	<u>+900</u>	<u>—</u>
Net Liability	11,600	—	—	11,600
Add: Firm Underwriting	<u>3,200</u>	<u>1,200</u>	<u>4,000</u>	<u>8,400</u>
Total Liability	<u>14,800</u>	<u>1,200</u>	<u>4,000</u>	<u>20,000</u>

**Illustration 6**

Sam Limited invited applications from public for 1,00,000 equity shares of ₹10 each at a premium of ₹5 per share. The entire issue was underwritten by the

underwriters A, B, C and D to the extent of 30%, 30%, 20% and 20% respectively with the provision of firm underwriting of 3,000, 2,000, 1,000 and 1,000 shares respectively. The underwriters were entitled to the maximum commission permitted by law.

The company received applications for 70,000 shares from public out of which applications for 19,000, 10,000, 21,000 and 8,000 shares were marked in favour of A, B, C and D respectively.

Calculate the liability of each one of the underwriters. Also ascertain the underwriting commission @2.5% payable to the different underwriters.

**Solution:**

**Liability of Underwriters (No. of shares)**

	<i>Total</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Gross Liability	1,00,000	30,000	30,000	20,000	20,000
Less: Unmarked Applications	<u>12,000</u>	<u>3,600</u>	<u>3,600</u>	<u>2,400</u>	<u>2,400</u>
Balance	88,000	26,400	26,400	17,600	17,600
Less: Marked Applications	<u>58,000</u>	<u>19,000</u>	<u>10,000</u>	<u>21,000</u>	<u>8,000</u>
Balance	30,000	7,400	16,400	- 3,400	9,600
Less: Firm Underwriting	<u>7,000</u>	<u>3,000</u>	<u>2,000</u>	<u>1,000</u>	<u>1,000</u>
Balance	23,000	4,400	14,400	- 4,400	8,600
Adjustment	-	- 1,650	- 1,650	+4,400	- 1,100
Net Liability	23,000	2,750	12,750	-	7,500
Total Liability including firm underwriting	30,000	5,750	14,750	1,000	8,500

**Note:** The above answer is arrived at by treating 'firm underwriting shares' on par with marked applications. Alternatively, the 'firm underwriting shares' may be treated on par with un-marked applications. Then, the answer will be as follows:

	<i>Shares</i>
Applications received including firm underwriting	77,000 (70,000 + 7,000)
Less: Marked Applications	<u>58,000</u>
Un-marked Applications	<u>19,000</u>

**Liabilities of Underwriters (No. of shares)**

	<i>Total</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Gross Liability	1,00,000	30,000	30,000	20,000	20,000
Less: Unmarked Applications	<u>19,000</u>	<u>5,700</u>	<u>5,700</u>	<u>3,800</u>	<u>3,800</u>
Balance	81,000	24,300	24,300	16,200	16,200

Less: Marked Applications	58,000	19,000	10,000	21,000	8,000
Balance	23,000	5,300	14,300	- 4,800	8,200
Adjustment	—	- 1,800	- 1,800	+4,800	1,200
Net Liability	23,000	3,500	12,500	—	7,000
Add: Firm Underwriting	7,000	3,000	2,000	1,000	1,000
Total Liability	30,000	6,500	14,500	1,000	8,000

### Underwriting Commission

The underwriting commission is payable at the rate of 2.5% of the issue price of shares.

$$\text{Thus, commission payable to A} = 30,000 \times 15 \times \frac{2.5}{100} = ₹11,250$$

$$\text{B} = ₹11,250$$

$$\text{C} = 20,000 \times 15 \times \frac{2.5}{100} = ₹7,500$$

$$\text{D} = ₹7,500$$

## 8. ACCOUNTING TREATMENT RELATING TO UNDERWRITING OF SHARES OR DEBENTURES

(a) When the shares or debentures are allotted to the underwriters in respect of their liability:

Underwriters A/c	Dr.	with the value of the shares or debentures taken up by the underwriters
To Share Capital A/c		
Or		
To Debentures A/c		

(b) When commission becomes payable to the underwriters:

Underwriters Commission A/c	Dr.	with the amount of commission due on the total issue price of the shares underwritten
To Underwriters A/c		

(c) When the net amount due from the underwriters on the shares or debentures taken up by them is received:

Bank	Dr.	with the net amount due
To Underwriters A/c		

**Note:** Underwriting commission is not generally paid in cash. Instead the same is adjusted against the money due on shares or debentures taken up by the underwriters and only the net amount (i.e., total amount due on shares or debentures

taken up by the underwriters minus the underwriting commission) is received from the underwriters.

### Illustration 7

Wye Co. Ltd., invited the public to subscribe to the following:

- (i) 10,000 equity shares of ₹100 each at a premium of 5% and
- (ii) ₹2,50,000 in 14% Debentures of ₹100 @ ₹96.

60% of the shares and the whole of the issue of debentures were underwritten by M/s Sure and Fast for the commission allowable by the Government. The applications from the public totalled 6,000 shares and 2,000 debentures. The underwriters fulfilled their obligations. Show the journal entries that would appear in the books of the company.

### Solution:

#### Journal Entries

<i>Particulars</i>		<i>Dr.(₹)</i>	<i>Cr.(₹)</i>
Bank	Dr.	8,22,000	
To Equity Share Application and Allotment A/c			6,30,000
To 14% Debenture Application and Allotment A/c			1,92,000
(Receipt of application money on 6,000 Equity Shares @ ₹105 each including premium of ₹5 each and on 2,000 debentures @ ₹96 each at a discount of ₹4 each)			
Equity Share Application and Allotment A/c	Dr.	6,30,000	
To Equity Share Capital A/c			6,00,000
To Securities Premium A/c			30,000
(Allotment of 6,000 equity shares of ₹100 each at a premium of ₹5 each to public as per Board's resolution dated.....)			
14% Debenture Application and Allotment A/c	Dr.	1,92,000	
Discount on Issue of Debentures A/c	Dr.	8,000	
To 14% Debenture A/c			2,00,000
(Allotment of 2,000 14% Debentures of ₹100 each at a discount of ₹4 each to public as per Board's resolution dated.....)			
M/s Sure and Fast	Dr.	2,52,000	
To Equity Share Capital A/c			2,40,000

To Securities Premium A/c			12,000
(Allotment of 2,400 Equity Shares being 60% of 4,000 shares remaining unsubscribed to M/s Sure and Fast being their liability as per Board's resolution dated.....)			
M/s Sure and Fast	Dr.	48,000	
Discount on Issue of Debentures A/c	Dr.	2,000	
To 14% Debentures A/c			50,000
(Allotment of 500 debentures allotted to M/s Sure and Fast being their liability as per Board's resolution dated.....)			
Underwriting Commission A/c	Dr.	19,830	
To M/s Sure and Fast			19,830
(Underwriting Commission due on issue price of Shares @ 2.5% on ₹6,30,000 and on debentures @ 1.5% and 2.5% on ₹1,92,000 and ₹48,000 respectively)			
Bank	Dr.	2,80,170	
To M/s Sure and Fast			2,80,170
[Receipt of the net amount due from M/s Sure and Fast, i.e., ₹(2,52,000 + 48,000 – 19,830)]			

**Working Notes:***(i) Liability of M/s Sure and Fast*

	Shares (60%)	Debentures (100%)
Gross liability	6,000	2,500
Less: Marked applications:		
Shares		Debentures
60% of 6,000	100% of 2,000	
	<u>3,600</u>	<u>2,000</u>
Net liability	<u>2,400</u>	<u>500</u>

*(ii) Underwriting Commission*

Underwriting Commission has been calculated as per the rates applicable in force:

Equity Shares	₹
2.5% on issue price of 6,000 shares underwritten = 6,30,000 x 2.5%	15,750

*Debentures*

On amounts subscribed by the public:

1.5% on issue price of 2,000 debentures	₹
= 2,000 x 96 x 1.5% =	2,880

On amounts devolved on underwriters:

2.5% on issue price of 500 debentures		
= 500 x 96 x 2.5% =	<u>1,200</u>	<u>4,080</u>
		<u>19,830</u>

**9. ACQUISITION OF BUSINESS**

Acquisition of business by a limited company, generally, refers to the purchase of a non-corporate business like sole- proprietorship or partnership form of business by a company. This does not necessarily mean that a limited company cannot acquire the business of a corporate body, i.e., another limited company. But strictly speaking, the acquisition of business of a limited company by another limited company comes under the purview of "Amalgamation, Absorption and Reconstruction of Companies".

Such an acquisition of business by a limited company may take any of the following two forms:

- (i) An existing company may purchase an existing business of a sole-proprietor or a partnership firm, or
- (ii) A new company may be formed to take over an existing business of a sole proprietor or a partnership firm, i.e., the existing business unit may be converted into a limited company. If the object is to retain the control of the sole-proprietor or the partners in the company, a private limited company may be formed. On the other hand, if the object of conversion is to supplement the resources for carrying out various expansion programmes, a public limited company may be formed for the purpose.

**10. IMPORTANT POINTS TO BE NOTED IN CONNECTION WITH ACQUISITION OF A BUSINESS**

*1. Consideration:* Consideration refers to the price payable by the company for the business acquired. Generally, an agreement is made between the company and the vendor containing the terms and conditions of the acquisition of business, the basis for determining the consideration and the mode of payment of the consideration.

Consideration is usually, determined by taking into consideration the following facts:

- (i) the present value of the net tangible assets acquired, i.e., the present value of gross tangible assets acquired less liabilities, if any, acquired by the company;
- (ii) the amount payable, if any, for goodwill of the business acquired; and
- (iii) the liability to be taken over by the purchasing company.

In case, for determining the present value of the assets, revaluation is made and the re-valued figures should be taken as their present values; otherwise, book-values should be taken. In case the business is purchased for a lump sum, the difference between the consideration to be paid and the value of net tangible assets will be the goodwill. On the other hand, if the value of net tangible assets exceeds the consideration the difference will be treated as Capital Reserve.

As the terms and conditions of acquisition of business may vary in different circumstances, the basis for determining the consideration also varies from case to case. As for example, it may so happen that only the fixed assets of an existing business may be taken over by a company or only the tangible assets may be taken over by the company or both the assets and the liabilities may be taken over by the company. However, in most of the cases, the consideration is given in the problem itself.

*2. Mode of payment of the consideration by the company:* After the consideration is determined, the next question that arises is how to satisfy the consideration. The consideration may be satisfied by the company in any of the following ways:

- (i) the entire consideration may be paid in cash;
- (ii) the entire consideration may be paid by the issue of shares of the company;
- (iii) the entire consideration may be paid by the issue of debentures of the company; or
- (iv) the consideration may be paid partly in cash and partly by the issue of shares and/or debentures of the company.

Generally the last method is adopted by a company to satisfy the consideration.

It is important to note here that the shares or debentures may be issued to the vendors either at par or at a premium or at a discount.

*3. Interest payable to vendors on the purchase consideration:* If the payment of consideration to the vendors is unnecessarily delayed, the question of payment of interest to vendors for the period of the delay, naturally, arises. In such a case, the vendors can legitimately claim interest on the amount due to them for the period of delay, i.e., from the date of purchase to the date of payment. Hence, the agreement must mention about the payment of interest to vendors specifying the rate of interest.

*4. Realisation expenses of the vendor borne by the purchasing company:* Sometimes, the purchasing company may agree to bear the cost of realisation of the vendor and the fact must be contained in the agreement. Such expenses are to be treated as capital expenditure of the company and should be debited to Goodwill Account.

*5. Whether to open a new set of books by the company on acquisition of business or to continue the books of the vendor:* On acquisition of business, the company may either open a new set of books for recording its transactions or continue the same set of books of the vendor. A decision has to be taken by the company in this respect.

*6. Collection of debtors and payment to creditors of the vendor on behalf of the vendor:* Sometimes, the debtors and the creditors of the vendor are not taken over by

the purchasing company. In such a case, the purchasing company may agree to collect the debtors of the vendor and to pay the creditors of the vendor as agent of the vendor in exchange of certain commission at fixed rate.

### 11. ACCOUNTING ENTRIES IN THE BOOKS OF THE PURCHASING COMPANY ON ACQUISITION

A. When new set of books are opened:

1. When the business is acquired—

Business Purchase A/c	Dr.	with the amount of consideration
To Vendors		

2. When the assets and liabilities taken over by the company are recorded—

Sundry Assets A/c (Individually)	Dr.	with the re-valued figure if any; otherwise, at book value
To Sundry Liabilities A/c (Individually)		with the values at which they are taken over
To Business Purchase A/c		with the consideration

Alternatively, instead of passing the above two entries the following entry may also serve the purpose:

When the business is acquired - Sundry Assets A/c (Individually)	Dr.	with the revalued figures, if any, otherwise, at book figures
To Sundry Liabilities (Individually)		with the values at which they are taken over
To Vendors		with the consideration

**Notes:** (i) If the credit total is greater than the debit total, the difference should be debited to Goodwill Account.

(ii) If the debit total is greater than the credit total, the difference has to be treated as capital gain and as such, Capital Reserve Account should be credited.

Goodwill or Capital Reserve should be ascertained only as indicated above - the amount appearing in the vendors, balance sheet is not relevant.

3. When the payment is made to vendors:

Vendors	Dr.	with the amount due
To Share Capital A/c		with the value of shares allotted, if any
To Debentures A/c		with the value of debentures allotted, if any
To Cash or Bank A/c		with the amount of cash, if any

**Notes:** (i) Shares capital or Debentures should be credited only with their nominal value.



The consideration was to be discharged by the issue of 20,000 equity shares of ₹10 each as fully paid-up and the balance in cash.

You are asked to journalise the transactions in the books of Snow View Ltd. Also prepare the opening balance sheet of the company.

**Solution:**

**Journal Entries**

<i>Particulars</i>	<i>Dr. (₹)</i>	<i>Cr. (₹)</i>
Business Purchase A/c	Dr. 2,50,000	
To Bansal		2,50,000
(Consideration due to vendor on purchase of the business as per agreement dated...)		
Freehold Premises A/c	Dr. 1,00,000	
Plant and Machinery A/c	Dr. 80,000	
Stock A/c	Dr. 20,000	
Debtors A/c	Dr. 27,500	
Bank	Dr. 75,000	
Goodwill A/c	Dr. 30,000	
To Provision for Bad Debts A/c		2,500
To Sundry Creditors A/c		50,000
To Bills Payable A/c		30,000
To Business Purchase A/c		2,50,000
(Taking over the assets and the liabilities of the vendor debiting the difference to Goodwill Account)		
Bansal	Dr. 2,50,000	
To Equity Shares Capital A/c		2,00,000
To Bank		50,000
(Allotment of 20,000 Equity Shares of ₹10 each to vendor as fully paid-up for consideration other than cash and payment of the balance ₹50,000 in cash as per Board's resolution)		

**Balance Sheet of Snow View Ltd. as at.....**

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
Share Capital		Fixed Assets	
Authorised Capital		Goodwill	30,000
1,00,000 Equity		Freehold Premises	1,00,000
Shares of ₹10 each	<u>10,00,000</u>	Plant and Machinery	80,000
		Investment	Nil

Issued, Subscribed and Paid-up Capital: 20,000 Equity Shares of ₹10 each	2,00,000	<i>Current Assets, Loans and Advances</i> A. <i>Current Assets</i> Stock	20,000
Issued to vendors as fully paid-up for consideration other than cash		Debtors	27,500
<i>Reserves and Surplus</i>	Nil	Less: Provision	<u>2,500</u> 25,000
<i>Secured Loan</i>	Nil	Cash at Bank	25,000
<i>Unsecured Loan</i>	Nil		
<i>Current Liabilities and Provisions</i> A. <i>Current Liabilities</i> Bill Payable	30,000		
Sundry Creditors	<u>50,000</u>		
	<u>2,80,000</u>		<u>2,80,000</u>

**Illustration 9** (Where consideration is not given in the problem).

Woodlands Ltd., registered with a capital of ₹10,00,000 in equity shares of ₹10 each acquired the business of M/s A and B, the Balance Sheet of whom at the date of acquisition was as follows:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Bills Payable	16,000	Cash at Bank	29,000
Sundry Creditors	30,000	Bills Receivable	13,000
Reserve	14,000	Sundry Debtors	48,000
Capital Accounts:		Stock	18,000
A - 70,000		Furniture and Fixtures	2,000
B - <u>70,000</u>	1,40,000	Plant and Machinery	40,000
	<u>2,00,000</u>	Land and Buildings	<u>50,000</u>
			<u>2,00,000</u>

The assets and liabilities were subject to the following revaluation:

- Plant and Machinery to be depreciated by 10%
- Furniture and Fittings to be depreciated by 15%
- Land and Buildings to be appreciated by 20%
- A provision to be made for bad debts on debtors @ 2-1/2%
- Goodwill of the firm was valued at ₹24,000.

The consideration was to be discharged as follows:

- (i) Allotment of 10,000 Equity Shares of ₹10 each at ₹12 each.
- (ii) Allotment of 500 14% Debentures of ₹100 each at a discount of 10%.

(iii) Balance in cash.

The cost of acquisition of the company amounted to ₹ 5,000.

You are required to show the journal entries in the books of the company and prepare the opening balance sheet of the company after the acquisition.

**Solution:**

	₹	₹
Calculation of consideration:		
Assets taken over:		
Cash at Bank		29,000
Bills Receivable		13,000
Sundry Debtors	48,000	
Less: Provision for Bad Debts @ 2-1/2%	<u>1,200</u>	46,800
Stock		18,000
Furniture and Fixtures	2,000	
Less: Depreciation @ 15%	<u>300</u>	1,700
Plant and Machinery	40,000	
Less: Depreciation @ 10%	<u>4,000</u>	36,000
Land and Buildings	50,000	
Add: Appreciation @ 20%	<u>10,000</u>	60,000
Goodwill		<u>24,000</u>
Gross Assets taken over		2,28,500
Less: Liabilities taken over:		
Bills Payable	16,000	
Sundry Creditors	<u>30,000</u>	<u>46,000</u>
Net Assets acquired or consideration		<u>1,82,500</u>

**Journal Entries**

		Dr.	Cr.
Business Purchase A/c	Dr.	₹ 1,82,500	
To M/s A and B			₹ 1,82,500
(Consideration due to vendors on purchase of the business as per agreement dated...)			
Bank	Dr.	29,000	
Bills Receivable A/c	Dr.	13,000	
Sundry Debtors A/c	Dr.	48,000	
Stock A/c	Dr.	18,000	
Furniture and Fixture A/c	Dr.	1,700	
Plant and Machinery A/c	Dr.	36,000	
Land and Buildings A/c	Dr.	60,000	
Goodwill A/c	Dr.	24,000	

To Provision for Bad Debts A/c		1,200
To Bills Payable A/c		16,000
To Sundry Creditors A/c		30,000
To Business Purchase A/c		1,82,500

(Taking over the various assets and the liabilities of the vendor)

M/s A and B	Dr.	1,82,500	
Discount on Issue of Debentures A/c	Dr.	5,000	
To Equity Share Capital A/c			1,00,000
To Securities Premium A/c			20,000
To 14% Debentures A/c			50,000
To Bank			17,500

(Allotment of 10,000 Equity Shares of ₹10 each at a premium of ₹2 per share and 500 debentures of ₹100 each at a discount of 10% to vendors for consideration other than cash and the balance of ₹17,500 paid in cash as per Board resolution dated.....)

Goodwill	Dr.	₹ 5,000	₹
To Bank			5,000

(Payment of cost of acquisition; added to goodwill since it increases the cost of acquiring the business)

Securities Premium A/c	Dr.	5,000	
To Discount on Issue of Debentures A/c			5,000

(Writing off of capital losses against Securities Premium Account as per Section 78)

#### Balance Sheet of Woodlands Ltd. as at.....

Liabilities	₹	Assets	₹
<i>Share Capital</i>		<i>Fixed Assets</i>	
Authorised Capital -		Goodwill	29,000
1,00,000 Equity Shares		Land and Building	60,000
of ₹10 each	10,00,000	Plant and Machinery	36,000
Issued, Subscribed and		Furniture and Fixtures	1,700
Paid-up Capital		<i>Investments</i>	Nil
10,000 Equity Shares of		<i>Current Assets, Loans</i>	
₹10 each	1,00,000	<i>and Advances</i>	
(Issued to vendors as fully		Stock	18,000
paid-up for consideration		Sundry Debtors	48,000
other than cash)		Less: Provision	1,200
			46,800

<i>Reserves and Surplus</i>			
Securities Premium A/c	15,000	Cash at Bank	6,500
<i>Secured Loan</i>		<i>B. Loans and Advances</i>	
500 14% Debentures of ₹100 each	50,000	Bills Receivable	13,000
<i>Unsecured Loans</i>	Nil		
<i>Current Liabilities and Provisions</i>			
<i>A. Current Liabilities</i>			
Bills Payable	16,000		
Sundry Creditors	30,000		
<i>B. Provisions</i>			
	Nil		
	<u>2,11,000</u>		<u>2,11,000</u>

## 12. PROFIT OR LOSS PRIOR TO INCORPORATION

Generally, it happens with a newly formed company that an existing business is taken over as a going concern as at a date prior to the date of incorporation of the company. The profit or loss of the business, thus acquired, the period from the date of purchase till the date of incorporation\* is called Profit or Loss Prior to Incorporation. Unless the agreement with the vendors provides otherwise, such a profit or loss belongs to the company. But profit or loss prior to incorporation should not be regarded as trading profit or loss of the company since the company cannot earn profit or incur loss before it comes into existence. In fact, such profit or loss increases or decreases the net assets acquired by the company on its formation and comes to it not as revenue but as capital. Thus, profit or loss prior to incorporation is of capital nature and as such it is necessary to ascertain such profit or loss as accurately as possible.

The profit or loss prior to incorporation should be treated in the books of accounts in the following manner:

(i) *Profit prior to incorporation:* Such a profit, being of capital nature, cannot be credited to the Profit and Loss Account and thus it cannot ordinarily be used for the purpose of payment of dividend. Hence, such a profit should be credited to Capital Reserve Account which can be utilised in writing off capital losses like preliminary expenses, discount on issue of shares or debentures or in writing down the value of fixed assets including goodwill. Until it is fully utilized, Capital Reserve Account has to be shown in the liabilities side of the Balance Sheet under the heading "Reserve and Surplus".

(ii) *Loss prior to incorporation:* Such a loss, being of capital nature, should be debited to a separate account called "Loss Prior to Incorporation Account" which can be written off against other capital profits of the company. It can also be written off against the profit revenue profit of the company.

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\* The date of commencement of business is of no consequence for this purpose.

### **13. METHODS TO ASCERTAIN PROFIT OR LOSS PRIOR TO INCORPORATION**

Profit or loss prior to incorporation can be ascertained in any of the following methods:

#### **13.1 Preparation of Trading and Profit and Loss Account for the period upto the date of incorporation**

Under this method, a trial balance has to be prepared as on the date of incorporation of the company by balancing off of the books and the value of stock has to be ascertained as on that date. Then, a Trading and Profit and Loss Account has to be prepared for the period which will disclose the profit or loss prior to incorporation. Profit or Loss prior to incorporation can be ascertained accurately under this method. All transactions thereafter would naturally relate exclusively to the post-incorporation period and thus give post-incorporation profit or loss.

But stock-taking and the balancing off of the books in the intervening period is often very inconvenient as the same will adversely affect the normal functioning of the business. In view of this difficulty, this method is not generally adopted in actual practice.

#### **13.2 Preparation of Profit and Loss Account by apportionment of items of income and expenses into pre-incorporation and post-incorporation periods**

Under this method, a trial balance is prepared only at the end of the accounting period and the profit or loss for the pre and post incorporation period is ascertained by preparing Profit and Loss Account. The profit or loss is ascertained by apportioning items of income and expenses between the two periods, i.e., the pre-incorporation and the post-incorporation periods on some basis. Thus under this method, profit or loss for the two periods, cannot be ascertained as accurately as under the first method, this method can only give an estimate of the profit or loss of the two periods. As the first method involves a lot of inconvenience, there is no other alternative than to depend on this method.

### **14. BASIS OF APPORTIONMENT OF EXPENSES**

The apportionment of profit or loss, in such a case, between the pre-incorporation and post-incorporation periods can be done on any one of the following basis:

#### **14.1 Time basis**

The profit or loss for the whole accounting period is apportioned between the periods prior to and after incorporation on the basis of time i.e., in proportion of the time of the respective periods. For example, if the time of the pre-incorporation and post-incorporation period be 3 months and 9 months respectively, the profit or loss for the whole period would be apportioned between the two periods in the ratio 3 : 9, i.e. 1 : 3. Thus, 1/4th of the profit would be treated as pre-incorporation profit while 3/4th of the profit would be treated as post-incorporation profit.

This principle is based on the assumption that profits are earned by the business evenly throughout the year. But in reality since no business can be expected to earn its profits evenly throughout the year, apportionment of profit or loss solely on the basis of time is not at all satisfactory.

#### 14.2 Turnover basis

The profit or loss for the whole accounting period is apportioned between the periods prior to and after incorporation on the basis of turnover, i.e., in proportion of the turnover of the respective periods. For example, if the turnover of the pre-incorporation and post-incorporation periods be ₹ 1, 00,000 and ₹ 4, 00,000 respectively, the profit or loss for the whole period would be apportioned between the two periods in ratio of 1 : 4. Thus, 1/5th of the profit would be treated as pre-incorporation profit while 4/5th of the profit would be treated as post-incorporation profit.

This principle is also based on the assumption that turnover is spread evenly throughout the year. But in reality, this may not be always true. Besides, all the expenses of business need not necessarily depend on the turnover. As such, apportionment of profit or loss solely on the basis of turnover is also not satisfactory.

#### 14.3 Equitable basis

The manner of apportionment of profit or loss between the pre-incorporation and the post-incorporation periods actually depends upon the nature of each particular item. The most equitable method is normally to apportion the gross profit or gross loss of the whole accounting period on the basis of the turnover and the expenses on their respective merits, those, varying with turnover being apportioned on that basis and those which do not vary with the turnover being apportioned on the basis of time.

What is actually to be done in this case is to prepare a Trading Account for the whole period and to find out the gross profit or gross loss in the usual way. The Profit and Loss Account is split up into the two periods (i.e., pre-incorporation and post-incorporation periods) and all the items appearing in the Profit and Loss Account are then apportioned on the basis of their respective merits. For this, following principles are, generally followed:

<i>Nature of the item</i>	<i>Basis of apportionment</i>
1. Gross Profit or Gross Loss	On the basis of turnover in the respective periods.
	OR
	In the absence of turnover in the respective periods, on the basis of expenses which are directly related to turnover in the respective periods.
	OR

- In the absence of any such information, on the basis of time in the respective periods.
2. All fixed or standing charges, such as rent, rates, taxes, insurance, general expenses, salaries, printing and stationery, telephone, postage, and telegrams, depreciation, audit fees, etc. On the basis of time in the respective periods.
  3. All variable expenses directly varying with the turnover, such as, commission, discount, brokerage, salesmen's salaries, advertisement carriage outwards, etc. On the basis of turnover in the respective periods.
  4. All expenses wholly applicable to the period prior to incorporation like vendors' salary, interest on vendors' capital, interest on purchase consideration upto the date of incorporation, etc. Exclusively to be shown in the pre-incorporation period.
  5. All expenses wholly applicable to the post-incorporation period like, directors' fees, debenture interest, discount on issue of debentures, preliminary expenses or formation expenses, etc. Exclusively to be shown in the post-incorporation period.

#### Illustration 10

Smart Ltd. was incorporated on 1st August, 2010 with an authorised capital of 5,00,000 equity shares of ₹10 each to acquire the business of Mr. Smart with effect from 1st April, 2010.

The purchase consideration was agreed at ₹7,00,000 to be satisfied by the issue of 40,000 equity shares of ₹10 each as fully paid-up and 3,000, 9% debentures of ₹100 each as fully paid-up.

The entries relating to the transfer were not made in the books which were carried on without a break until 31st March, 2011. On 31st March, 2011 the trial balance extracted from the books showed the following:

	₹	₹
Sales		10, 43,700
Purchases	7,76,580	
Advertising	37,800	
Postage and Telegram	8,820	
Rent and Rates	18,420	
Packing Expenses	16,800	
Office Expenses	12,540	

Opening Stock as on 1.4.2010	1,05,220	
Directors' fees	20,000	
Debenture Interest	18,000	
Land and Buildings	3,00,000	
Plant and Machinery	1,80,000	
Furniture and Fixture	20,000	
Sundry Debtors	1,39,500	
Cash at Bank	40,000	
Cash-in-hand	4,900	
Bills Payable		30,000
Sundry Creditors		53,240
Preliminary Expenses	7,360	
Smart's Capital Account		5, 89,000
Smart's Drawings Account	10,000	
	<u>17,15,940</u>	<u>17,15,940</u>

You are also given the following additional information:

- Stock on 31st March, 2011 amounted to ₹98,920.
- The average monthly sales for April, May and June were one half of those for the remaining months of the year and the gross profit margin was constant throughout the year.

You are required to prepare the Trading and Profit and Loss Account for the year ended 31st March, 2011 and the Balance Sheet of Smart Ltd. as on that date.

**Solution:**

**M/s Smart Ltd.  
Trading Account for the year ended 31st March, 2011**

Dr.		Cr.
Particulars	₹	Particulars
To Opening Stock	1,05,220	By Sales
To Purchases	7,76,580	By Closing Stock
To Gross Profit c/d	<u>2,60,820</u>	
	<u>11,42,620</u>	<u>11,42,620</u>

**Profit and Loss Account for the year ended 31st March, 2011**

	<i>Pre-incor- Poration period, i.e., 1.4.2010 to 31.7.2010</i>	<i>Post-incor- poration period, i.e., 1.8.2010 to 31.3.2011</i>		<i>Pre-incor- poration period, i.e., 1.4.2010 to 31.7.2010</i>	<i>Post-incor- poration period, i.e., 1.8.2010 to 31.3.2011</i>
	₹	₹		₹	₹
To Advertising (5 : 16)	9,000	28,800	By Gross Profit b/d (5 : 16)	62,100	1,98,720
To Postage and Telegram (1 : 2)	2,940	5,880			



**Working Notes:**

1. Ratio of Time between pre-incorporation period and post-incorporation period = 4 months : 8 months = 1 : 2
2. Ratio of turnover between pre-incorporation period and post-incorporation period -  
Let the turnover for the months of April, May and June be 1, turnover for the remaining months will be 2.  
Now, turnover for the pre-incorporation period  
(i.e. 1.4.2010 to 31.7.2010 = 1+1+1+2 = 5  
and turnover for the post-incorporation period  
(i.e., 1.8.2010 to 31.3.2010 = 8 x 2 = 16  
Ratio of turnover between the two periods = 5 : 16
3. As the amount of preliminary expenses is negligible. it has been assumed that the same has to be written off against the revenue.
4. The value of goodwill has been ascertained as follows:

	₹
Consideration for the business acquired	7,00,000
Less: Net assets acquired represented by Smart's Capital (i.e., Assets – Liabilities)	<u>5,89,000</u>
Price paid for goodwill	1,11,000
Less: Pre-incorporation profit being capital profit adjusted against goodwill	<u>35,840</u>
Net value of goodwill to be shown in the balance sheet	<u>75,160</u>

5. Drawings made by Smart have been treated as money advanced to Smart by the company.

**Illustration 11**

A company, incorporated on 1st May, 2010 acquired a business as a going concern with effect from 1st January, 2010. The first accounts were drawn up to September 30, 2010.

The gross profit is ₹2,24,000. The general expenses are ₹56,880, directors remuneration ₹4,000 p.m.; formation expenses amounted to ₹6,000, rent which till June 30, 2010 was ₹400 p.m. was increased to ₹12,000 per annum from July 1, 2010.

The manager of the earlier firm whose salary was ₹2,000 p.m. was made as director upon the incorporation and his remuneration thereafter is included in the figure of Directors' remuneration given earlier.

Prepare Profit and Loss Account for the period and find out the profits available for dividends and the profit prior to incorporation.

**Solution:****Profit and Loss Account for the period of  
9 months ended 30th September, 2010**

<i>Dr.</i>	<i>Pre-incor- Poration period, i.e., 1.1.2010 to 30.4.2010</i>	<i>Post-incor- poration period, i.e., 1.5.2010 to 30.9.2010</i>		<i>Pre-incor- poration period, i.e., 1.1.2010 to 30.4.2010</i>	<i>Post-incor- poration period, i.e., 1.5.2010 to 31.9.2010</i>
	<u>₹</u>	<u>₹</u>		<u>₹</u>	<u>₹</u>
To General Expenses (4 : 5)	25,280	31,600	By Gross Profit b/d	99,556	1,24,444
To Rent	1,600	3,800			
To Salary to Manager	8,000				
To Directors' Remu- neration		20,000			
To Pre-incorporation profit transferred to Capital Reserve A/c	64,676				
To Net Profit c/d	<u>99,556</u>	<u>1,24,444</u>		<u>99,556</u>	<u>1,24,444</u>

1. Profit available for dividend = ₹69,044.
2. Profit prior to incorporation ₹64,676 being capital profits transferred to Capital Reserve Account which can be utilised in writing off formation expenses of ₹6,000. Then the Capital Reserve Account will show a balance of ₹58,676.

**Working Notes:**

1. As the information is available about the turnover in the respective periods, gross profit has been apportioned between the pre-incorporation and post-incorporation periods on the basis of time, i.e., in the ratio 4 : 5
2. Directors' remuneration for the period 1st May, 2010 to September, 2010, i.e., for 5 months = ₹4,000 x 5 = ₹20,000.
3. Rent for the period prior to incorporation = ₹400 x 4 = ₹1,600

For the post incorporation period

$$\text{₹}400 \times 2 + \frac{\text{Rs. } 12,000}{12} \times 3 = \text{₹}(800 + 3,000) = \text{₹}3,800$$

4. Salary to manager for the period prior to incorporation = ₹2,000 x 4 = ₹8,000.
5. General expenses have been apportioned on the basis of time, i.e., in the ratio 4 : 5.
6. It is assumed that the formation expenses are not be written off.

### Illustration 12

Vijay Ltd. was incorporated on 1st March, 2011 and received its certificate of commencement of business on 1st April, 2011. The company bought the business of M/s Small and Co. with effect from 1st November, 2010. From the following figures relating to the year ending October, 2011, find out the profit available for dividends:

- (i) Sales for the year were ₹6,00,000 out of which sales upto 1st March were ₹2,50,000.
- (ii) Gross profit for the year was ₹1,80,000.
- (iii) Expenses debited to the Profit and Loss account were:

	<u>₹</u>
Rent	9,000
Salaries	15,000
Directors' fees	4,800
Interest on debentures	5,000
Audit fees	1,500
Discount on sales	3,600
Depreciation	24,000
General expenses	4,800
Advertising	18,000
Stationery and printing	3,600
Commission on sales	6,000
Bad debts	1,500*
Interest to vendor on purchase consideration upto May 1, 2011	3,000

\*₹500 relates to debts created prior to incorporation.

### Solution:

#### Statement showing profit prior to and after incorporation

	<i>Basis of alloca- tion</i>	<i>Prior to incorpo- ration</i>	<i>After incorpo- ration</i>
Gross profit	Sales	75,000	1,05,000
Less: Expenses:			
Rent	Time	3,000	6,000

Salaries	Time	5,000	10,000
Directors' fees	Actual	-	4,800
Interest on debentures	Actual	-	5,000
Audit fees	Time	500	1,000
Discount on sales	Sales	1,500	2,100
Depreciation	Time	8,000	16,000
General expenses	Time	1,600	3,200
Advertising	Sales	7,500	10,500
Stationery and printing	Time	1,200	2,400
Commission on sales	Sales	2,500	3,500
Bad debts	Actual	500	1,000
Interest to vendor	Time	<u>2,000</u>	<u>1,000</u>
Total		<u>33,300</u>	<u>66,500</u>
Profit (gross profit – expenses)		<u>41,700</u>	<u>38,500</u>

**Working Notes:**

- (i) The ratio of sales is 2,50,000 : 3,50,000 i.e. 5 : 7.
- (ii) The ratio of time is 4 months (upto 1st March) to 8 months or 1 : 2 except in case of interest to vendor.
- (iii) Interest paid to vendor is for 6 months out of which interest for four months (upto 1st March) is charged to the period prior to incorporation.
- (iv) Bad debts have been allocated as per the instruction.
- (v) Directors' fees and interest on debentures, arising only on formation of the company, have been charged wholly to the post incorporation period.

**15. PRELIMINARY EXPENSES**

Preliminary expenses refer to those expenses which are incurred in forming a joint stock company. These comprise the expenses incidental to the creation and floatation of a company and the following items are usually included therein:

- (i) Stamp duty and fees payable on registration of the company and stamp papers purchased for preliminary contracts of the company.
- (ii) The legal charges for preparing the Prospectus, Memorandum and Articles of Association and contracts and of the registration of the company.
- (iii) Accountants' and Valuers' fees for reports, certificates, etc.
- (iv) Cost of printing the Memorandum and Articles of Association, printing, advertising and issuing the prospectus.
- (v) Cost of preparing, printing and stamping letters of allotment and share certificates.
- (vi) Cost of preparing printing and stamping Debenture Trust Deed, if any.

- (vii) Cost of company's seal and books of account, statutory books and statistical books.

But preliminary expenses should not include the following expenses which are incurred before commencement of business:

- (i) Cost of preparation of the feasibility report.
- (ii) Cost of preparation of the project report.
- (iii) Cost of conducting market survey or any other survey necessary for the business of the company.
- (iv) Consultancy fees payable for engineering services in connection with the business.

Generally, a limit is prescribed in the Articles or Prospectus or the Statement in lieu of Prospectus upto which any amount would be spent on preliminary expenses. But sanction of the shareholders is necessary if the amount spent on preliminary expenses exceeds the said limit. The accounting for preliminary expenses will be as follows:

Preliminary Expenses A/c                      Dr.        with the amount of expenditure  
     To Cash or Bank A/c

Strictly speaking preliminary expenses are of capital nature and as such should be shown on the assets side of the Balance Sheet under the heading "Miscellaneous Expenditure".

Although, there is no legal compulsion to write off the amount of preliminary expenses, it is prudent to write it off as soon as possible since it is unrepresented by assets. Preliminary expenses being of capital nature, may be written off against capital profits.

Alternatively, such expenses may be treated as deferred revenue expenditure and written off gradually over a number of years by transfer to Profit and Loss Account. For income-tax purposes, such expenses can be written off over a period of 10 years. Until completely written off, Preliminary expenses have to be shown on the assets side of the Balance Sheet under the heading 'Miscellaneous Expenditure'.

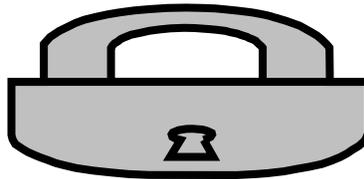
#### LESSON ROUND UP



- Underwriting is an undertaking or guarantee given by the underwriters to the company that the shares or debentures offered to the public will be subscribed for in full.
- An underwriting agreement may be: Complete Underwriting, Partial Underwriting and Firm Underwriting.

- Applications bearing the stamp of the respective underwriters are called marked applications and the applications received directly by the company which do not bear any stamp of the underwriters are known as unmarked applications.
- Acquisition of business by a limited company refers to the purchase of a non-corporate business like sole- proprietorship or partnership form of business by a company.
- The profit or loss of the business, acquired the period from the date of purchase till the date of incorporation is called profit or loss prior to incorporation.
- The apportionment of profit or loss between the pre-incorporation and post-incorporation periods can be done on: time basis, turnover basis and equitable basis.
- Preliminary expenses refer to those expenses incidental to the creation and floatation of a company.

### SELF TEST QUESTIONS



1. The issue of 1,00,000 shares of ₹10 each at ₹11 made by X Ltd. was underwritten by M/s A and B. Subscriptions totalled 1,25,000 shares. What is the liability of the underwriters and what is the maximum commission that they can get under the law? *[Ans.: Nil, ₹27,500].*
2. M/s X and Y entered into an underwriting agreement with Y Ltd. for 60% of the issue of 15% ₹50,00,000 Debentures with a firm underwriting of ₹5,00,000. Marked applications were for ₹35,00,000 debentures. What is the liability of the underwriter? *[Ans.: ₹5,00,000;].*
3. 70% of an issue of 10,00,000 shares of ₹10 each is underwritten by M/s K and Y. Applications totalled 8,00,000 shares. Is there a liability of the underwriters? *[Ans.: Yes, 1,40,000 shares].*
4. 80% of an issue of 1,00,000 shares of ₹100 each, issued at a premium of 20% was underwritten by M/s G and G along with a firm underwriting of 10,000 shares. The total number of shares applied for was 90,000. How many shares must G and G take? *[Ans.: 18,000].*
5. On conversion into a limited company, M/s G and J found that their capital finally stood at ₹1,20,000 and ₹80,000: and the two, partners shared profits and losses in the ratio 5 : 3 after interest on capital @ 12%. They want their mutual relationship should continue in the company also as far as possible. Suggest in what shares the purchase consideration should be discharged by the company.

*[Ans.: Equity Shares: ₹1,20,000 to G and ₹80,000 to J; 12% preference shares to J for ₹8,000 (equity shares should be in the ratio of 5 : 3)].*

6. M/s Singh and Khan had on 31st March, 2011 capitals standing at ₹1,50,000 and ₹1,00,000; sundry creditors on that date were ₹30,000. Goodwill stood in the book at ₹20,000. The partners sold their business to an existing company for 25,000 shares of ₹10 each issued at a premium of ₹2 per share. At what value will the company record the goodwill on purchase and at what figure will it appear in the company's balance sheet?

**[Ans.: ₹50,000 in either case].**

7. Zed Ltd. was formed on 1st May, 2011 and it obtained the certificate to commence business on 1st June, 2011. It acquired a running business with effect from 1st January, 2007. Books were closed on 30th September, 2011 when it was found that the net profit was ₹2,00,000 with a gross profit of ₹4,50,000. Directors' fee was ₹34,000. Sales in the months January to June per month were  $\frac{1}{2}$  of the sales per month in the remaining months. What profit is available to the company for declaration of dividend?

**[Ans.: ₹96,000 (Time basis)].**

8. Which of the following will not be included in preliminary expenses:-
- (a) Cost of preparation of Memorandum of Association and Articles of Association.
  - (b) Cost of preparation and issue of the prospectus.
  - (c) Cost of acquisition of a running business.
  - (d) Stamp duty on the authorised capital.
  - (e) Cost of the project report.

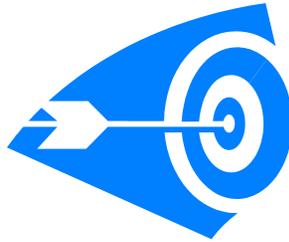
**[Ans.: (c) and (e)].**

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## STUDY V

# FINAL ACCOUNTS OF JOINT STOCK COMPANIES

### LEARNING OBJECTIVES



To understand the statutory provisions regarding preparation of final accounts of joint stock companies.

- Familiarize with the form of balance sheet in Horizontal Form and Vertical form.
- Understand the requirements as to the preparation of profit and loss account.
- Appreciate the importance and modes of making different adjustments in the final account.
- Explain the legal provisions of managerial remuneration and its calculation thereof.
- Appropriate the profit of the company.
- Understand the application of tax on distributed profit.
- Explain the meaning of the term dividend and interim dividend.
- Understand the accounting treatment of issue of bonus shares.

## 1. INTRODUCTION

Final accounts of a company consist of the following two statements:

1. Balance Sheet as at the end of the accounting period disclosing the financial position of the company; and
2. Profit and Loss Account for that period disclosing the results of the operations of the company.

A company is under legal obligation to keep proper books of account and to prepare its final accounts every year in the prescribed manner. While preparing its final accounts, each and every company must conform to certain legal requirements as contained in the Companies Act, 1956. As such, it would be proper to consider first those legal provisions.

## 2. PREPARATION AND PRESENTATION OF FINAL ACCOUNTS

Section 210 of the Companies Act, 1956 governs the preparation and

presentation of final accounts of a company. It provides that—

- (1) At every general meeting of a company held in pursuance of Section 166, the Board of directors of the company shall lay before the company—
  - (a) a balance sheet at the end of the period specified in sub-section (3); and
  - (b) a profit and loss account for that period.
- (2) In the case of a company not carrying on business for profit, an income and expenditure account shall be laid before the company at its annual general meeting instead of a profit and loss account and all references to ~~profit and loss account~~, ~~profit~~ and ~~loss~~ in this section and elsewhere in this Act, shall be construed in relation to such a company, as reference respectively to the ~~income and expenditure account~~, the excess of ~~income over expenditure~~ and ~~the excess of expenditure over income~~.
- (3) The profit and loss account shall relate -
  - (a) in the case of the first annual general meeting of the company, to the period beginning with incorporation of the company and ending with a day which shall not precede that day of the meeting by more than nine months, and
  - (b) in the case of any subsequent annual general meeting of the company, to the period beginning with the day immediately after the period for which the account was last submitted and ending with a day which shall not precede the day of the meeting by more than six months, or in cases where an extension of time has been granted for holding the meeting under the second proviso to Sub-section (1) of Section 166, by more than six months and the extension so granted.
- (4) The period to which the account aforesaid relates is referred to in this Act as a ~~financial year~~ and it may be less or more than a calendar year, but it shall not exceed fifteen months:

Provided that it may extend to eighteen months where special permission has been granted in that behalf by the Registrar.

### **3. FORM AND CONTENTS OF BALANCE SHEET AND PROFIT AND LOSS ACCOUNT**

Section 211 of the Companies Act, 1956 prescribes the form and contents of balance sheet and profit and loss account of a company which provides that—

1. Every balance sheet a company shall give a true and fair view of the state of affairs of the company as at the end of the financial year and shall, subject to the provisions of this section, be in the form set out in Part I of Schedule VI or as near thereto as circumstances admit or such other form as may be permitted by the Central Government either generally or in any particular case; and in preparing the balance sheet, due regard shall be had, as far as may be, to the general instruction for preparation of balance sheet under the heading ~~Notes~~ at the end of that part:

Provided that nothing contained in this sub-section shall apply to any insurance or banking company or any company engaged in the generation or supply of electricity or to any other class of company for which a form of balance sheet has been specified in or under the Act governing such class of company.

2. Every profit and loss account of a company shall give a true and fair view of the profit or loss of the company for the financial year and shall, subject as aforesaid, comply with the requirements of Part II of Schedule VI, so far as they are applicable thereto:

Provided that nothing in this sub-section shall apply to any insurance or banking company or any company engaged in the generation of supply of electricity or to any other class of company for which a form of profit and loss account has been specified in or under the Act governing such class of company.

3. The Central Government may, by notification in the Official Gazette, exempt any class of companies from compliance with any of the requirements in Schedule VI, if, in its opinion, it is necessary to grant the exemption in the public interest.

Any such exemption may be granted either unconditionally or subject to such conditions as may be specified in the notification.

Every profit and loss account and balance sheet of company shall comply with the accounting standards. Where the profit and loss account and balance sheet of the company do not comply with the accounting standards, such companies shall disclose in its profit and loss account and balance sheet, the following: (a) deviation from the accounting standards; (b) the reasons for such deviation, and (c) the financial effect, if any, arising due to such deviation.

4. The Central Government may, on the application or with the consent of the Board of Directors of the company, by order, modify in relation to the company any of the requirements of this Act as to the matters to be stated in the company's balance sheet or profit and loss account for the purpose of adapting them to the circumstances of the company.
5. The balance sheet and the profit and loss account of a company shall not be treated as not disclosing a true and fair view of the state of affairs of the company, merely by reason of the fact that they do not disclose:
  - (i) in the case of an insurance company, any matters which are not required to be disclosed by the Insurance Act, 1938;
  - (ii) in the case of banking company, matters which are not required to be disclosed by Banking Companies Act, 1949;
  - (iii) in the case of a company engaged in the generation or supply of electricity, any matters which are not required to be disclosed by both the Indian Electricity Act, 1910 and the Electricity (Supply) Act, 1948;
  - (iv) in the case of a company governed by any other special Act for the time being in force, any matters which are not required to be disclosed by that special Act; or
  - (v) in the case of any company, any matters which are not required to be disclosed by virtue of the provisions contained in Schedule VI or by virtue of a notification issued under Sub-section (3) or an order issued under Sub-section (4).
6. For the purposes of this section, except where the context otherwise requires, any reference to a balance sheet or profit and loss account shall

include any notes thereon or documents annexed thereto giving information required by this Act, and allowed by this Act to be given in the form of such notes or documents.

7. If any such person as is referred to in Sub-section (6) of Section 209 fails to take all reasonable steps to secure compliance by the company, as regards any accounts laid before the company in general meeting, with the provisions of this section and with the other requirements of this Act as to the matters to be stated in the accounts, he shall, respect of each offence, be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both:

Provided that in any proceedings against a person in respect of an offence under this section, it shall be a defence to prove that a competent and reliable person was charged with the duty of seeing that provisions of this section and the other requirements aforesaid were complied with, and was in a position to discharge that duty:

Provided further that no person shall be sentenced to imprisonment for any such offence unless it was committed wilfully.

8. If any person, not being a person referred to in Sub-section (6) of Section 209, having been charged by the managing director or manager or Board of directors as the case may be, with the duty of seeing that the provisions of this section and the other requirements aforesaid are complied with, makes default in doing so, he shall in respect of each offence be punishable with imprisonment for a term which may extend to six months or with fine which may extend to ten thousand rupees, with both:

Provided that no person shall be sentenced to imprisonment for any such offence unless it was committed wilfully.

Since every balance sheet of a company shall in the form set out in Part I of Schedule VI and every profit and loss account of a company shall comply with the requirements of Part II of Schedule VI, or as near thereto as circumstances admit it is important to study Schedule VI very carefully. A detailed discussion is made on Schedule VI as follows:

#### **4. SCHEDULE VI OF THE COMPANIES ACT, 1956**

Schedule VI to the Companies Act, 1956, consists of the following parts:

Part I - Part I of Schedule VI prescribes two alternative forms of balance sheet, i.e., horizontal form and vertical form.

It also indicates the information relating to different assets and liabilities which should be disclosed, therein. Besides there are general instructions at the end of the form which must be followed in preparing the balance sheet.

Part II - Part II of Schedule VI deals with the requirements as to profit and loss account. Unlike balance sheet, no form for profit and loss account has been prescribed. As such, a company may adopt any suitable form to meet its own requirements.

Part III - Part III of Schedule VI contains the interpretation of certain terms.

Part IV - Part IV of Schedule VI contains balance sheet abstract and general business profile.

**SCHEDULE VI**

(See Section 211)

**PART I****FORM OF BALANCE SHEET**

The balance sheet of a company shall be either in horizontal form or vertical form:

**A. Horizontal Form**

Balance Sheet of.....(Here enter the name of the company) as at.....(Here enter the date as at which the balance sheet is made out).

<i>Figs. For the prev. year</i> ₹	<i>LIABILITIES</i>	<i>Figs. for the curr. Year</i> ₹	<i>Figs. For the prev. year</i> ₹	<i>ASSETS</i>	<i>Figs. for the curr. Year</i> ₹
(1)	(2)	(3)	(4)	(5)	(6)
	<p>Share Capital:</p> <p>Authorised..... Shares of ₹..... each.</p> <p><i>Issued:</i> (distinguishing between the various classes of capital and stating the particulars specified below in respect of each class)..... shares of ₹..... each.</p> <p><i>Subscribed:</i> (distinguishing between the various classes of capital and stating the particulars specified below, in respect of each class)..... shares of ₹..... each ₹..... called up.</p> <p>Of the above shares..... shares are allotted as fully paid-up pursuant to a contract without payments being received in cash.</p> <p>Of the above shares..... shares are allotted as fully paid-up by way of bonus shares.</p> <p>(Specify the source from which bonus shares are issued, e.g., capitalisation of profits or reserves or from share premium account).</p> <p><i>Less:</i> Calls unpaid:</p> <p>(i) By directors.</p> <p>(ii) By others.</p>			<p><i>Fixed Assets:</i></p> <p>Distinguishing as far as possible between expenditure upon:</p> <p>(a) goodwill,</p> <p>(b) land,</p> <p>(c) buildings,</p> <p>(d) leaseholds,</p> <p>(e) railway sidings,</p> <p>(f) plant and machinery,</p> <p>(g) furniture and fittings,</p> <p>(h) development of property,</p> <p>(i) patents, trade marks and designs,</p> <p>(j) livestock,</p> <p>(i) vehicles, etc.</p> <p><b>Notes:</b></p> <p>(1) Under each head the original cost and the additions thereto and deductions therefrom during the year, and the total depreciation written off or provided upto the end of the year are to be stated. Depreciation written off or provided shall be allocated under the different asset heads and deducted in arriving at the value of Fixed Assets.</p>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p><i>Add:</i> Forfeited shares: (Amount originally paid-up) (Any capital profit on re-issue of forfeited shares should be transferred to capital reserve).</p> <p><b>Notes:</b></p> <p>(1) Terms of redemption or conversion (if any) of any redeemable preference capital are to be stated together with earliest date of redemption or conversion.</p> <p>(2) Particulars of any option on un-issued share capital are to be specified.</p> <p>(3) Particulars of the different classes of preference shares are to be given.</p> <p>(4) In the case of subsidiary companies the number of shares held by the holding company as well as by the ultimate holding company and its subsidiaries shall be separately stated in respect of subscribed share capital. The auditor is not required to certify the correctness of such shareholding as certified by the management.</p> <p><i>Reserves and Surplus:</i></p> <ol style="list-style-type: none"> <li>1. Capital Reserves.</li> <li>2. Capital Redemption Reserve.</li> <li>3. Securities Premium Account (showing details of its utilisation in the manner provided in Section 78 in the year of utilisation).</li> <li>4. Other reserves specifying the nature of each reserve and the amount in respect thereof.</li> </ol> <p><i>Less:</i> Debit balance in profit and loss account (if any) (The debit balance in the profit and loss account shall be shown as a deduction from the uncommitted reserves; if any).</p>			<p>(2) Where the original cost aforesaid and additions and deductions thereto, relate to any fixed asset which has been acquired from a country outside India, and in consequence of a change in the rate of exchange at any time after the acquisition of such asset, there has been an increase or reduction in the liability of the company, as expressed in Indian currency, for making payment towards the whole or a part of the cost of the asset or for repayment of the whole or a part of moneys borrowed by the company from any person, directly or indirectly in any foreign currency specifically for the purpose of acquiring the asset (being in either case the liability existing immediately before the date on which the change in the rate of exchange takes effect), the amount by which the liability is so increased or reduced during the year, shall be added to, or, as the case may be, deducted from the cost, and the amount arrived at after such addition or deduction shall be taken to be the cost of the fixed asset.</p> <p><i>Explanation:</i> In this paragraph unless the context otherwise requires, the expressions "<del>rate of exchange</del>", "<del>foreign currency</del>" and "<del>Indian currency</del>" shall have the meanings respectively assigned to them under Sub-section (1) of Section 43A of the Income-tax Act, 1961 (43 of 1961), and Explanation 2 and Explanation 3 of the said sub-section shall, as far as may be, apply in relation to the said paragraph as they apply to the said Sub-section (1).</p>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p>5. Surplus, i.e., balance in profit and loss account after providing for proposed allocations, namely: Dividend, Bonus or Reserves.</p> <p>6. Proposed additions to Reserves.</p> <p>7. Sinking Funds.</p> <p><b>Notes:</b></p> <p>(1) Addition to and deductions since last balance sheet to be shown, under each of the specified heads.</p> <p>(2) The word <del>fund</del> in relation to any <del>Reserve</del> should be used only where such Reserve is specifically represented by earmarked investments.</p> <p><i>Secured Loans:</i></p> <ol style="list-style-type: none"> <li>1. Debentures</li> <li>2. Loans and Advance from Bank.</li> <li>3. Loans and Advances from Subsidiaries.</li> <li>4. Other Loans and Advances.</li> </ol> <p><b>Notes:</b></p> <p>(1) Loans from directors and manager should be shown separately.</p> <p>(2) Interest accrued and due on Secured Loans should be included under the appropriate sub-heads under the head <del>Secured Loans</del>.</p> <p>(3) The nature of security to be specified in each case.</p> <p>(4) Where loans have been guaranteed by managers and/or directors, a mention thereof shall also be made and also the aggregate amount of such loans under each head.</p> <p>(5) Terms of redemption or conversion (if any) of debentures issued to be stated together with earliest date of redemption or conversion.</p>			<p>(3) In every case where the original cost cannot be ascertained without unreasonable expense or delay the valuation shown by the books shall be given. For the purpose of this paragraph, such valuation shall be the net amount at which an asset stood in the company's books at the commencement of this Act after deduction of the amounts previously provided or written off for depreciation or diminution in value and where any such asset is sold the amount of sales proceeds, shall be shown as deduction.</p> <p>(4) Where sums have been written off on a reduction of capital or a revaluation of assets, every balance sheet (after the first balance sheet) subsequent to the reduction or revaluation shall show the reduced figures and with the date of the reduction in place of the original cost.</p> <p>(5) Each balance sheet for the first five years subsequent to the date of the reduction, shall show also the amount of the reduction made.</p> <p>(6) Similarly, where sums have been added by writing up the assets, every balance sheet subsequent to such writing up shall show the increased figures with the date of the increase in place of the original cost. Each balance sheet for the first five years subsequent to the date of the writing up shall also show the amount of increase made.</p> <p><i>Investments:</i></p> <p>Showing nature of investment and mode of valuation; for example, cost or market value, and distinguishing between:</p>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p><i>Unsecured Loans:</i></p> <ol style="list-style-type: none"> <li>1. Fixed Deposits.</li> <li>2. Loans and Advances from subsidiaries.</li> <li>3. Short-term Loans and Advances:               <ol style="list-style-type: none"> <li>(a) From banks.</li> <li>(b) From others.</li> </ol>               (Short-term Loans will include those which are due for repayment for not more than one year as at the date of the balance sheet).             </li> <li>4. Other Loans and Advances:               <ol style="list-style-type: none"> <li>(a) From banks.</li> <li>(b) From others.</li> </ol> </li> </ol> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>(1) Loans from directors and manager should be shown separately.</li> <li>(2) Interest accrued and due on Unsecured Loans should be included under the appropriate sub-heads under the head "Unsecured Loans".</li> <li>(3) Where loans have been guaranteed by manager, and/or directors, a mention thereof shall also be made together with the aggregate amount of such loans under each head.</li> </ol> <p><i>Current Liabilities and Provisions:</i></p> <p><i>A. Current Liabilities</i></p> <ol style="list-style-type: none"> <li>1. Acceptances.</li> <li>2. Sundry creditors           <ol style="list-style-type: none"> <li>(a) total outstanding dues of micro enterprises and small enterprises; and</li> <li>(b) total outstanding dues of creditors other than micro enterprises and small enterprises.</li> </ol> </li> <li>3. Subsidiary companies.</li> <li>4. Advance payments and unexpired discounts for the portion for which value has still to be given, e.g., in the case of the following companies: Newspapers, Fire Insurance, Theatres, Clubs, Banking, Steamship Companies, etc.</li> </ol>			<ol style="list-style-type: none"> <li>1. Investments in Government or Trust securities.</li> <li>2. Investments in shares, debentures or bonds. (Showing separately shares, fully paid-up and partly paid-up and also distinguishing the different classes of shares and showing also in similar details investments in shares, debentures or bonds of subsidiary companies).</li> <li>3. Immovable properties.</li> <li>4. Investments in the capital of partnership firms.</li> <li>5. Balance of unutilised monies raised by issue.</li> </ol> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>(1) Aggregate amount of company's quoted investments and also the market value thereof shall be shown.</li> <li>(2) Aggregate amount of company's unquoted investments shall also be shown.</li> <li>(3) All unutilised monies out of the issue must be separately disclosed in the Balance Sheet of the company indicating the form in which such unutilised funds have been invested.</li> </ol> <p><i>Current Assets, Loans and Advances:</i></p> <p><i>(A) Current Assets</i></p> <ol style="list-style-type: none"> <li>1. Interest accrued on investments.</li> <li>2. Stores and spare parts.</li> <li>3. Loose tools.</li> <li>4. Stock-in-trade.</li> <li>5. Work-in-progress.</li> </ol> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>(1) Mode of valuation of stock shall be stated and the amount in respect of raw materials shall also be stated separately where practicable.</li> <li>(2) Mode of valuation of work-in-progress shall be stated.</li> </ol>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p>5. Investor Education and Protection Funds shall be credited by the following amounts namely:</p> <p>(a) Unpaid dividend</p> <p>(b) Unpaid application money received by the companies for allotment of securities and due for refund</p> <p>(c) Unpaid Matured Deposits</p> <p>(d) Unpaid Matured Debentures</p> <p>(e) Interest accrued on (a) to (d) above.</p> <p>6. Other liabilities (if any).</p> <p>7. Interest accrued but not due on loans.</p> <p>(a) the principal amount and the interest due thereon (to be shown separately) remaining unpaid to any supplier as at the end of each accounting year;</p> <p>(b) the amount of interest paid by the buyer in terms of section 16 of the Micro, Small and Medium Enterprises Development Act, 2006, along with the amount of the payment made to the supplier beyond the appointed day during each accounting year;</p> <p>(c) the amount of interest due and payable for the period of delay in making payment (which have been paid but beyond the appointed day during the year) but without adding the interest specified under the Micro, Small and Medium Enterprises Development Act, 2006;</p> <p>(d) the amount of interest accrued and remaining unpaid at the end of each accounting year; and</p> <p>(e) the amount of further interest remaining due and payable even in the succeeding years, until such date when the interest dues as above are actually paid to the small enterprise, for the purpose of disallowance as a deductible expenditure under section 23 of the Micro, Small and Medium Enterprises Development Act, 2006.</p>			<p>6. Sundry debtors:</p> <p>(a) Debts outstanding for a period exceeding six months.</p> <p>(b) Other debts.</p> <p><i>Less: Provision</i></p> <p><b>Notes:</b></p> <p>(1) The amounts to be shown under sundry debtors shall include the amounts due in respect of goods sold or services rendered or in respect of other contractual obligations but shall not include the amounts which are in the nature of loans or advances.</p> <p>(2) In regard to sundry debtors particulars to be given separately of:</p> <p>(a) debts considered good and in respect of which the company is fully secured;</p> <p>(b) debts considered good for which the company holds no security other than the debtors personal security; and</p> <p>(c) debts considered doubtful or bad.</p> <p>(3) Debts due by directors or other officers of the company or any of them either severally or jointly with any other person or debts due by firms or private companies respectively in which any director is a partner or a director or a member to be separately stated.</p> <p>(4) Debts due from other companies under the same management within the meaning of Sub-section (1B) of Section 370 to be disclosed with the name of the companies.</p> <p>(5) The maximum amount due by directors or other officers of the company at any time during the year to be shown by way of a note.</p>	

(1)	(2)	(3)	(4)	(5)	(6)
	<p><i>B. Provisions:</i></p> <p>8. Provision for taxation</p> <p>9. Proposed dividends.</p> <p>10. For contingencies.</p> <p>11. For provident fund scheme.</p> <p>12. For insurance, pension and similar staff benefit schemes.</p> <p>13. Other provisions.</p> <p>A footnote to the balance sheet may be added to show separately:</p> <p>1. Claims against the company not acknowledged as debts.</p> <p>2. Uncalled liability on shares partly paid.</p> <p>3. Arrears of fixed cumulative dividends.</p> <p>(The period for which the dividends are in arrear or if there is more than one class of shares, the dividends on each such class are in arrear, shall be stated. The amount shall be stated before deductions of income-tax, except that in the case of tax-free dividends the amount shall be shown free of income-tax and the fact that it is so shown shall be stated).</p> <p>4. Estimated amount of contracts remaining to be executed on capital account and not provided for.</p> <p>5. Other moneys for which the company is contingently liable.</p> <p>(The amount of any guarantees given by the company on behalf of directors or other officers of the company shall be stated and where practicable, the general nature and amount of each such contingent liability, if material, shall also be specified).</p>			<p>(6) The provision to be shown under this head should not exceed the amount of debts stated to be considered doubtful or bad and any surplus of such provision, if already created, should be shown at every closing under "Reserves and Surplus" (on the Liabilities side) under a separate sub-head ("Reserve for Doubtful or Bad Debts").</p> <p>(7A) Cash balance on hand.</p> <p>(7B) Bank Balances:</p> <p>(a) With Scheduled Banks; and</p> <p>(b) With others.</p> <p><b>Notes:</b></p> <p>In regard to bank balances, particulars to be given separately of:</p> <p>(a) the balances lying with scheduled banks on current accounts, call accounts and deposit accounts;</p> <p>(b) the names of the bankers other than Scheduled Banks and the balance lying with each such banker on current accounts, call accounts, and deposit accounts and the maximum amount outstanding at any time during the year with each such banker; and</p> <p>(c) the nature of the interest, if any, of any director or his relative in each of the bankers [other than Scheduled Banks referred to in (b) above].</p> <p>(d) All unutilised monies out of the issue must be separately disclosed in the balance sheet of the company indicating the form in which such unutilised funds have been invested.</p> <p>(B) <i>Loans and Advances:</i></p> <p>(8) (a) Advances and Loans to subsidiaries.</p>	

(1)	(2)	(3)	(4)	(5)	(6)
				<p>(b) Advances and loans to partnership firms in which the company or any of its subsidiaries is a partner.</p> <p>(9) Bills of Exchange.</p> <p>(10) Advances recoverable in cash or in kind or for value to be received, e.g., rates, taxes, insurance, etc.</p> <p>(11) Balance with Customs, Port Trust, etc. (where payable on demand).</p> <p><b>Notes:</b></p> <p>(1) The instructions regarding sundry debtors apply to "Loans and Advances" also.</p> <p>(2) The amounts due from other companies under the same management within the meaning of Sub-section (1B) of Section 370 should also be given with the names of the companies; the maximum amount due from everyone of these at any time during the year must be shown.</p> <p><i>Miscellaneous Expenditure:</i> (to the extent not written off or adjusted)</p> <p>(1) Preliminary expenses.</p> <p>(2) Expenses including commission or brokerage on underwriting or subscription of shares or debentures.</p> <p>(3) Discount allowed on the issue of shares or debentures.</p> <p>(4) Interest paid out of capital during construction (also stating the rate of interest).</p> <p>(5) Development expenditure not adjusted.</p> <p>(6) Other sums (specifying nature).</p> <p><i>Profit and Loss Account:</i> (Show here the debit balance of profit and loss account carried forward after deduction of the uncommitted reserves, if any).</p>	

**General Notes**

(1) Dividends declared by subsidiary companies after the date of the balance sheet should not be included unless they are in respect of period which closed on or before the date of the balance sheet.

(2) Any reference to benefits expected from contracts to the extent not executed shall not be made in the balance sheet but shall be made in the Board's report.

(3) Particulars of any redeemed debentures which the company has power to issue should be given.

(4) Where any of the company's debentures are held by a nominee or a trustee for the company, the nominal amount of the debentures and the amount at which they are stated in the books of the company shall be stated.

(5) A statement of investment (whether shown under ~~Investments~~ or under ~~Current Assets~~ as stock in trade) separately classifying trade investments and other investments should be annexed to the balance sheet showing the names of the bodies corporate under the same management in whose shares or debentures, investments have been made including all investments whether existing or not made subsequent to the date at which the previous balance sheet was made out and the nature and extent of the investments so made in each such body corporate; provided that in the case of an investment company, that is to say a company whose principal business is the acquisition of share, stock, debentures or other securities, it shall be sufficient if the statement shows only the investments existing on the date as at which the balance sheet has been made out.

In regard to the investment in the capital of partnership firms, the names of the firms (with the names of all their partners, total capital and the share of each partner) shall be given in the statement.

A ~~Trade Investment~~ means an investment by a company in the shares or debentures of another company, not being its subsidiary, for the purpose of promoting the trade or business of the first company.

(6) If, in the opinion of the Board, any of the current assets, loans and advances have not a value on realisation in the ordinary course of business at least equal to the amount at which they are stated, the fact that the Board is of that opinion shall be stated.

(7) Except in the case of first balance sheet laid before the company after the commencement of the Act, the corresponding amounts of the immediately preceding financial year for all items shown in the balance sheet shall also be given in the balance sheet. The requirements in this behalf shall in case of companies preparing quarterly or half-yearly accounts, etc., relate to the balance sheet for the corresponding date in the previous year.

(8) Current accounts with directors and manager, whether they are in credit or debit, shall be shown separately.

(9) The information required to be given under any of the items or sub-items in the Form, if it cannot be conveniently included in the balance sheet itself, shall be

furnished in a separate schedule to be annexed to and form part of the balance sheet. This is recommended when items are numerous.

(10) Naye paise can also be given in addition to rupees if desired.

(11) The terms appointed day, buyer, enterprise, micro enterprise, small enterprise and supplier, shall be as defined under clauses (b), (d), (e), (h), (m) and (n) respectively of section 2 of the Micro, Small and Medium Enterprises Development Act, 2006.

### B - Vertical Form

<i>Name of the Company</i>	.....			
<i>Balance Sheet as at</i>	.....			
	<i>Schedule</i>	<i>Figures</i>	<i>Figures as</i>	
	<i>No.</i>	<i>as at the</i>	<i>at the end</i>	
		<i>end of</i>	<i>of previous</i>	
		<i>current</i>	<i>financial</i>	
		<i>financial</i>	<i>year</i>	
		<i>year</i>		
(1)	(2)	(3)	(4)	

#### I. Sources of Funds

(1) Shareholders' funds:			
(a) Capital	...	...	...
(b) Reserves and surplus	...	...	...
(2) Loan funds:			
(a) Secured loans	...	...	...
(b) Unsecured loans	...	...	...
TOTAL	...	...	...

#### II. Application of Funds

(1) Fixed assets:			
(a) Gross block	...	...	...
(b) Less depreciation	...	...	...
(c) Net block	...	...	...
(d) Capital work in progress	...	...	...
(2) Investments			
(3) Current assets, loans and advances:			
(a) Inventories	...	...	...
(b) Sundry debtors	...	...	...
(c) Cash and bank balances	...	...	...

(d) Other current assets	...	...	...
(e) Loans and advances	...	...	...
<i>Less: Current Liabilities and Provisions:</i>			
(a) Liabilities	...	...	...
(b) Provisions	...	...	...
Net current assets	...	...	...
(4) (a) Miscellaneous expenditure to the extent not written off or adjusted	...	...	...
(b) Profit and loss account	...	...	...
<b>TOTAL</b>	...	...	...

**Notes:**

- Details under each of the above items shall be given in separate Schedules. The Schedules shall incorporate all the information required to be given under Part I-A of the Schedule VI read with notes containing general instruction for preparation of balance sheet.
- The Schedules, referred to above, accounting policies and explanatory notes that may be attached shall form an integral part of the balance sheet.
- The figures in the balance sheet may be rounded off as under:

<i>Where the turnover of the company in any financial year is:</i>	<i>Rounded off permissible</i>
--	--------------------------------

- |   |  |
|---|--|
| (i) Less than one hundred crore rupees  | to the nearest hundreds or thousands, or decimals thereof.                         |
| (ii) One hundred crore rupees or more but less than five hundred crore rupees | to the nearest hundreds, thousands, lakhs, or millions or decimals thereof.        |
| (iii) Five hundred crore rupees or more                                       | to the nearest hundreds, thousands, lakhs, millions or crores or decimals thereof. |

- A footnote to the balance sheet may be added to show separately contingent liabilities.

**PART II****Requirements as to Profit and Loss Account**

1. The provisions of this Part shall apply to the income and expenditure account referred to in Sub-section (2) of Section 210 of the Act, in like manner as they apply to a profit and loss account, but subject to the modification of references as specified in that sub-section.

- The profit and loss account:

- shall be so made out as clearly to disclose the result of the working of the company during the period covered by the account; and

- (b) shall disclose every material feature, including credits or receipts and debits or expenses in respect of non-recurring transactions or transactions of an exceptional nature.

3. The profit and loss account shall set out the various items relating to the income and expenditure of the company arranged under the most convenient heads; and in particular, shall disclose the following information in respect of the period covered by the account:

- (i) (a) The turnover, that is, the aggregate amount for which sales are effected by the company, giving the amount of sales in respect of each class of goods dealt with by the company, and indicating the quantities of such sales for each class separately.
- (b) Commission paid to sole selling agents within the meaning of Section 294 of the Act.
- (c) Commission paid to other selling agents.
- (d) Brokerage and discount on sale, other than the usual trade discount.
- (ii) (a) In the case of manufacturing companies -
  - (1) The value of the raw materials consumed, giving item-wise break-up and indicating the quantities thereof. In this break-up, as far as possible, all important basic raw materials shall be shown as separate items. The intermediates or components procured from other manufacturers may, if their list is too large to be included in the break-up, be grouped under suitable headings without mentioning the quantities, provided all those items which in value individually account for 10% or more of the total value of the raw material consumed shall be shown as separate and distinct items with quantities thereof in the break-up.
  - (2) The opening and closing stocks of goods produced, giving break-up in respect of each class of goods and indicating the quantities thereof.
- (b) In the case of trading companies, the purchases made and the opening and closing stocks, giving break-up in respect of each class of goods trade in by the company and indicating the quantities thereof.
- (c) In the case of companies rendering or supplying services, the gross income derived from services rendered or supplied.
- (d) In the case of a company, which falls under more than one of the categories mentioned in (a), (b) and (c) above, it shall be sufficient compliance with the requirements herein if the total amounts are shown in respect of the opening and closing stocks, purchases, sales and consumption of raw material with value and quantitative break-up and the gross income from services rendered is shown.
- (e) In the case of other companies, the gross income derived under different heads.

- Note:** (1) The quantities of raw materials, purchases, stocks and the turnover, shall be expressed in quantitative denominations in which these are normally purchased or sold in the market.
- (2) For the purpose of items (ii)(a), (ii)(b) and (ii)(d), the items for which the company is holding separate industrial licences, shall be treated as separate classes of goods, but where a company has more than one industrial licence for production of the same item at different places or for expansion of the licensed capacity, the item covered by all such licences shall be treated as one class. In the case of trading companies, the imported items shall be classified in accordance with the classification adopted by the Chief Controller of Imports and Exports in granting the import licences.
- (3) In giving the break-up of purchases, stocks and turnover, items like spare parts and accessories, the list of which is too large to be included in the break-up, may be grouped under suitable headings without quantities, provided all those items, which in value individually account for 10% or more of the total value of the purchases, stocks, or turnover, as the case may be, are shown as separate and distinct items with quantities thereof in the break-up.
- (iii) In the case of all concerns having works in progress, the amounts for which such works have been completed at the commencement and at the end of the accounting period.
- (iv) The amount provided for depreciation, renewals or diminution in value of fixed assets. If such provision is not made by means of a depreciation charge, the method adopted for making such provision. If no provision is made for depreciation, the fact that no provision has been made shall be stated and the quantum of arrears of depreciation computed in accordance with Section 205(2) of the Act shall be disclosed by way of a note.
- (v) The amount of interest on the company's debentures and other fixed loans, that is to say, loans for fixed periods, stating separately the amount of interest, if any paid or payable to the managing director and the manager, if any.
- (vi) The amount of charge for Indian income-tax and other Indian taxation on profits, including, where practicable, with Indian income-tax any taxation imposed elsewhere to the extent of the relief, if any, from Indian income-tax and distinguishing, where practicable, between income-tax and other taxation.
- (vii) The amounts reserved for -
- (a) repayment of share capital; and
  - (b) repayment of loans.
- (viii) (a) The aggregate, if material of any amounts set aside or proposed to be set aside, to reserves, but not including provisions made to meet any specific liability, contingency or commitment known to exist at the date as at which the balance sheet is made up.
- (b) The aggregate, if material, of any amounts withdrawn from such

reserves.

- (ix) (a) The aggregate, if material, of any amounts set aside to provisions made for meeting specific liabilities, contingencies or commitments.
- (b) The aggregate, if material, of the amounts withdrawn from such provisions, as no longer required.
- (x) Expenditure incurred on each of the following items, separately for each item:
  - (a) Consumption of stores and spare parts.
  - (b) Power and fuel.
  - (c) Rent.
  - (d) Repairs to buildings.
  - (e) Repairs to machinery.
  - (f) (1) Salaries, wages and bonus.
  - (2) Contribution to provident and other funds.
  - (3) Workmen and staff welfare expenses to the extent not adjusted from any previous provision or reserve.

**Notes:** 1. Information in respect of this item should also be given in the balance sheet under the relevant provision or reserve account.

- (g) Insurance.
- (h) Rates and taxes, excluding taxes on income.
- (i) Miscellaneous expenses:

Provided that any item under which the expenses exceed 1% of the total revenue of the company or ₹. 5,000, whichever is higher, shall be shown as a separate and distinct item against an appropriate account head in the Profit and Loss Account and shall not be combined with any other item to be shown under 'Miscellaneous Expenses'.

- (xi) (a) The amount of income from investments, distinguishing between trade investments and other investments.
- (b) Other income by way of interest, specifying the nature of the income.
- (c) The amount of income-tax deducted from the gross income is stated under sub-paragraph (a) and (b) above.
- (xii) (a) Profits or losses on investments showing distinctly the extent of the profits or losses earned or incurred on account of membership of a partnership firm to the extent not adjusted from any previous provision or reserve.

**Note:** Information in respect of this item should also be given in the balance sheet under the relevant provision or reserve account.

- (b) Profits or losses in respect of transactions of a kind, not usually undertaken by the company or undertaken in circumstances of an exceptional or non-recurring nature, if material in amount.
- (c) Miscellaneous income.
- (xiii) (a) Dividends from subsidiary companies.
- (b) Provisions for losses of subsidiary companies.

- (xiv) The aggregate amount of the dividends paid, and proposed, and stating whether such amounts are subject to deduction of income- tax or not.
- (xv) Amount, if material, by which any items shown in the profit and loss account are affected by any change in the basis of accounting.

4. The profit and loss account shall also contain or give by way of a note detailed information, showing separately the following payments provided or made during the financial year to the directors (including managing directors) or manager, if any, by the company, the subsidiaries of the company and any other person -

- (i) managerial remuneration under Section 198 of the Act paid or payable during the financial year to the directors (including managing directors), or manager, if any;
- (ii) other allowances and commission including guarantee commission (details to be given);
- (iii) any other perquisites or benefits in cash or in kind (stating approximate money value where practicable);
- (iv) pensions, etc. -
  - (a) pensions,
  - (b) gratuities,
  - (c) payments from provident funds, in excess of own subscriptions and interest thereon,
  - (d) compensation for loss of office,
  - (e) consideration in connection with retirement from office.

4A. The profit and loss account shall contain or give by way of a note a statement showing the computation of net profits in accordance with Section 349 of the Act with relevant details of the calculation of the commissions payable by way of percentage of such profits to the directors (including managing director), or manager (if any).

4B. The profit and loss account shall further contain or give by way of a note detailed information in regard to amounts paid to the auditors, whether as fees, expenses or otherwise for services rendered -

- (a) as auditor,
- (b) as advisor, or in any other capacity, in respect of -
  - (i) taxation matters;
  - (ii) company law matters;
  - (iii) management services; and
- (c) in any other manner.

4C. In the case of manufacturing companies, the profit and loss account shall also contain, by way of a note in respect of each class of goods manufactured, detailed quantitative information in regard to the following, namely:

- (a) the licensed capacity (where licence is in force);

- (b) the installed capacity; and
- (c) the actual production.

- Notes:**
1. The licensed capacity and installed capacity of the company as on the last date of the year to which the profit and loss account relates, shall be mentioned against items (a) and (b) above respectively.
  2. Against item (c), the actual production in respect of the finished products meant for sale shall be mentioned. In cases where semi-processed products are also sold by the company, separate details thereof shall be given.
  3. For the purposes of this paragraph, the items for which the company is holding separate industrial licences shall be treated as separate classes of goods but where a company has more than one industrial licence for production of the same item at different places or for expansion of the licensed capacity, the item covered by all such licences shall be treated as one class.

4D. The profit and loss account shall also contain by way of a note the following information namely:

- (a) value of imports calculated on C.I.F. basis by the company during the financial year in respect of -
  - (i) raw materials;
  - (ii) components and spare parts;
  - (iii) capital goods;
- (b) expenditure in foreign currency during the financial year on account of royalty, know-how, professional, consultation fees, interest, and other matters;
- (c) value of all imported raw materials, spare parts and components consumed during the financial year and the value of all indigenous raw materials, spare parts and components similarly consumed and the percentage of each to the total consumption;
- (d) the amount remitted during the year in foreign currencies on account of dividends with a specific mention of the number of non-resident shareholders, the number of shares held by them on which the dividends were due and year to which the dividends related;
- (e) earnings in foreign exchange classified under the following head, namely -
  - (i) export of goods calculated on F.O.B. basis;
  - (ii) royalty, know-how, professional and consultation fees;
  - (iii) interest and dividend;
  - (iv) other income, indicating the nature thereof.

5. The Central Government may direct that a company shall not be obliged to show the amount set aside to provisions other than those relating to depreciation,

renewal or diminution in value of assets, if the Central Government is satisfied that the information should not be disclosed in the public interest and would prejudice the company, but subject to the condition that in any heading stating an amount arrived at after taking into account the amount set aside as such, the provision shall be so framed or marked as to indicate that fact.

6. (1) Except in the case of the first profit and loss account laid before the company after the commencement of the Act, the corresponding amounts for the immediately preceding financial year for all items shown in the profit and loss account shall also be given in the profit and loss account.

(2) The requirement in sub-clause (1) shall, in the case of companies preparing quarterly or half-yearly accounts, relate to the profit and loss account for the period which ended on the corresponding date of the previous year.

### **PART III**

#### **Interpretation**

7. (1) For the purpose of Parts I and II of this Schedule, unless the context otherwise requires -

- (a) the expression ~~“Provision”~~ shall, subject to sub-clause (2) of this clause, mean any amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets, or retained by way of providing for any known liability of which the amount cannot be determined with substantial accuracy;
- (b) the expression ~~“reserve”~~ shall not, subject as aforesaid, include any amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets or retained by way of providing for any known liability;
- (c) the expression ~~“capital reserve”~~ shall not include any amount regarded as free for distribution through the profit and loss account; and the expression ~~“revenue reserve”~~ shall mean any reserve other than a capital reserve;

and in this sub-clause the expression ~~“liability”~~ shall include all liabilities in respect of expenditure contracted for and all disputed or contingent liabilities.

(2) Where -

- (a) any amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets, not being an amount written off in relation to fixed assets before the commencement of this Act; or
- (b) any amount retained by way of providing for any known liability;

is in excess of the amount which in the opinion of the directors is reasonably necessary for the purpose, the excess shall be treated for the purposes of this Schedule as a reserve and not as a provision.



Application of Funds

Net Fixed Assets	Investments
<input type="text"/>	<input type="text"/>
Net Current Assets	Misc. Expenditure
<input type="text"/>	<input type="text"/>
Accumulated Losses	
<input type="text"/>	

IV. Performance of Company (Amount in ₹. Thousands)

Turnover	Total Expenditure
<input type="text"/>	<input type="text"/>
+ – Profit/Loss Before Tax	+ – Profit/Loss After Tax
<input type="text"/>	<input type="text"/>

(Please tick Appropriate box + for Profit, - for Loss)

Earning Per Share in ₹.	Dividend rate %
<input type="text"/>	<input type="text"/>

V. Generic Names of Three Principal Products/Services of Company  
(as per monetary terms)

Item Code No.  
(ITC Code)

Product Description

<input type="text"/>
<input type="text"/>
<input type="text"/>

Item Code No.  
(ITC Code)

Product  
Description

Item Code No.  
(ITC Code)

Product  
Description

**\*Note:** for ITC Code of Products please refer to the publication Indian Trade Classification based on harmonized commodity description and coding system by Ministry of Commerce, Directorate General of Commercial Intelligence & Statistics Calcutta - 700 001.

*Annexure I*

**Code List 1 : State Codes**

State Code	State Name	State Code	State Name
01	Andhra Pradesh	02	Assam
03	Bihar	04	Gujarat
05	Haryana	06	Himachal Pradesh
07	Jammu & Kashmir	08	Karnataka
09	Kerala	10	Madhya Pradesh
11	Maharashtra	12	Manipur
13	Meghalaya	14	Nagaland
15	Orissa	16	Punjab
17	Rajasthan	18	Tamil Nadu
20	Uttar Pradesh	21	West Bengal
22	Sikkim	23	Arunachal Pradesh
24	Goa	52	Andaman Islands
53	Chandigarh	54	Dadra Islands
55	Delhi	56	Daman & Diu
57	Lakshwadeep	58	Mizoram
59	Pondicherry		

## 5. PROFIT AND LOSS ACCOUNT

Although, the Companies Act, 1956 does not recognise Trading Account or Profit and Loss Appropriation Account as such, it is desirable to make out the Profit and Loss Account in three sections namely: (i) Trading Account, (ii) Profit and Loss Account, and (iii) Profit and Loss Appropriation Account for the obvious reason that, in such a manner, it is possible to know separately the gross profit or loss, the net profit or loss and the disposition of the net profit, if any.

If it is desired by a company, no separate section for Trading Account need be shown. But the Profit and Loss Account must be split into two sections at least, namely: (i) Profit and Loss Account, and (ii) Profit and Loss Appropriation Account in order to distinguish the items chargeable against profits from the items of appropriation of profits:

- (i) The Profit and Loss Account, proper, should include all income and expenditure properly attributable to the year's working and show the figure of Profits or Loss for the year, and
- (ii) The second part of the account should include all appropriations for dividends, transfer to and from reserves and income and expenditure, if material, relating to previous years.

When the Profit and Loss Account is split up in two parts, i.e., (i) Profit and Loss Account, proper, and (ii) Profit and Loss Appropriation Account, a line of demarcation is drawn in between the two parts to separate the items chargeable against profits from the items of appropriation or disposition of profits. The items which are shown in the Profit and Loss Account proper are referred to as items appearing "Above the line" and the items which are shown in the appropriation section of the Profit and Loss Account are referred to as items appearing "Below the line".

The corresponding amounts of incomes and expenses for the immediately preceding financial year should be stated in the Profit and Loss Account except in the case of the first Profit and Loss Account after incorporation. The Profit and Loss Account should be made out in such a manner that it discloses a "true and fair" view of the profit earned or loss incurred by the company during the financial year. This implies that the items which are not related to the company's business or the items which are related to the previous years or the items of exceptional nature should be stated separately.

6. The Profit and Loss Account can be prepared either (a) in the conventional form of a ledger account, or (b) in the form of a statement.

**Account Form**

.....COMPANY LTD.

**Profit and Loss Account for the year ended.....**

	₹		₹
To Stock (opening)		By Sales	
To Purchases		By Stock (closing)	
To Wages			
To Coal and coke			
To Carriage inward			
To Gross profit c/d	_____		_____
	_____		_____
To General and administration salaries		By Gross profit b/d	
To Sales salaries		By Interest and dividend earned	
To Advertising		By Income from rent	
To Travel and entertainment		By Gain on sale of Investment	
To Rates and taxes			
To Insurance			
To Freight and delivery			
To Depreciation			
To Interest paid			
To Provision for taxes			
To Net profit c/d	_____		_____
	_____		_____

**Statement Form**

.....Company Ltd.

**Profit and Loss Account for the year ended.....**

	₹	₹	₹
Sales:			
Cash			
Credit			
Less: Returns	-----		
Net Sales	-----	-----	-----
Less: Cost of goods sold			-----
Gross Profit			-----
Less: Operating expenses		-----	
General and administrative expenses		-----	
Selling expenses		-----	-----
Net operating profit		-----	-----

<i>Add:</i> Non-operating incomes:	-----
<i>Less:</i> Non-operating expenses	-----
Net profit before interest and tax	-----
<i>Less:</i> Interest on debentures	-----
<i>Less:</i> Provision for taxation	-----
Net profit after tax	-----

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## 6. PROFIT AND LOSS APPROPRIATION ACCOUNT

The account showing the disposal of the net profit as disclosed by the Profit and Loss Account proper is called the Profit and Loss Appropriation Account. Although, the Companies Act, 1956 does not specify such an account, it is desirable for all practical purposes that a separate section of the Profit and Loss Account, called the Profit and Loss Appropriation Account, should be prepared in order to distinguish the appropriation of profits from the charge against profits. The profit and loss account proper is 'above the line', while the appropriation section is termed "below the line".

The following provisions contained in Part II of Schedule VI to the Companies Act relate to the appropriation of profit.

1. As per clause 3(vii) of Part II, the amounts reserved for:
  - (a) repayment of share capital; and
  - (b) repayment of loans.
2. As per clause 3(viii) of Part II:
  - (a) the aggregate, if material, of any amounts set aside or proposed to be set aside to reserves, but not including provisions made to meet any specific liability, contingency or commitment known to exist at the date as at which the balance sheet is made up; and
  - (b) the aggregate, if material, of any amounts withdrawn from such reserves.
3. As per clause 3(ix)(b) of Part II, the aggregate, if material, of the amounts withdrawn from the provisions made for meeting specified liabilities, contingencies or commitments as no longer required.
4. As per clause 3(xix) of Part II, the aggregate amount of the dividends paid and proposed and stating whether such amounts are subject to deduction of income-tax or not.

Thus, the amount of profits transferred to various reserves, amount withdrawn from such reserves, excess provisions made over the actual requirements or vice versa and distribution of profits by way of dividend to the shareholders are to be disclosed in the Profit and Loss Appropriation Account. In addition, it is appropriate that excess of provision or shortfall in them made last year as also prior period items be shown below the line. The Profit and Loss Appropriation Account may have the

items shown below.

**Profit and Loss Appropriation Account**

Excess of actual liability over the provisions made, if any	Last year's surplus profit remaining undistributed and carried forward, if any
Prior Period Expenses	Current year's net profits transferred from the Profit and Loss Account proper
Transfer of profits to Reserves, if any	Prior Period Incomes
Dividends paid, if any, i.e., interim dividend	Excess provisions made, if any, over actual liability, which are no longer required
Dividend proposed, if any, i.e., final dividend	Withdrawal from Reserves, if any
Tax on distributed profit (i.e., tax on dividend - proposed, declared or paid)	
Bonus to shareholders (issue of bonus shares out of profits)	
Surplus profits, if any, to be carried forward to the next year.	

It is important to note here that appropriation can be made only out of profits of the company and not out of losses incurred by the company; but the loss as disclosed by the profit and loss account may be further affected by such items as balance b/d excess provision, prior period items, etc. Hence, even in the case of loss, a Profit and Loss Appropriation Account may be prepared.

If there is any surplus left in the Profit and Loss Appropriation Account as undistributed, the same has to be carried forward to the next year and must be shown on the liabilities side of the Balance Sheet under the head, "Reserves and Surplus". On the other hand, if the company incurs losses, the Profit and Loss Account proper will show a debit balance which has to be carried forward to the next year and must be shown on the assets side of the Balance Sheet under the head, "Profit and Loss Account". If, however, there are any un-committed reserves of the company, the same has to be deducted from such reserves.

**SCHEDULE VI<sup>1</sup>**

(See section 211)

**GENERAL INSTRUCTIONS FOR PREPARATION OF BALANCE SHEET AND STATEMENT OF PROFIT AND LOSS OF A COMPANY IN ADDITION TO THE NOTES INCORPORATED ABOVE THE HEADING OF BALANCE SHEET UNDER**

**GENERAL INSTRUCTIONS**

1. Where compliance with the requirements of the Act including Accounting

<sup>1</sup> Schedule VI of the Companies Act, 1956 has been revised and the revised format of Balance Sheet and Statement of Profit and Loss is given below for the reference of the students. The revised Schedule VI is applicable for the financial statements prepared w.e.f 1st April 2011 onwards.

Standards as applicable to the companies require any change in treatment or disclosure including addition, amendment, substitution or deletion in the head/sub-head or any changes interse, in the financial statements or statements forming part thereof, the same shall be made and the requirements of the Schedule VI shall stand modified accordingly.

2. The disclosure requirements specified in Part I and Part II of this Schedule are in addition to and not in substitution of the disclosure requirements specified in the Accounting Standards prescribed under the Companies Act, 1956. Additional disclosures specified in the Accounting Standards shall be made in the notes to accounts or by way of additional statement unless required to be disclosed on the face of the Financial Statements. Similarly, all other disclosures as required by the Companies Act shall be made in the notes to accounts in addition to the requirements set out in this Schedule.
3. Notes to accounts shall contain information in addition to that presented in the Financial Statements and shall provide where required (a) narrative descriptions or disaggregations of items recognized in those statements and (b) information about items that do not qualify for recognition in those statements.

Each item on the face of the Balance Sheet and Statement of Profit and Loss shall be cross-referenced to any related information in the notes to accounts. In preparing the Financial Statements including the notes to accounts, a balance shall be maintained between providing excessive detail that may not assist users of financial statements and not providing important information as a result of too much aggregation.

4. Depending upon the turnover of the company, the figures appearing in the Financial Statements may be rounded off as below:

<i>Turnover</i>	<i>Rounding off</i>
(i) less than one hundred crore rupees	To the nearest hundreds, thousands, lakhs or millions, or decimals thereof.
(ii) one hundred crore rupees or more	To the nearest, lakhs, millions or crores, or decimals thereof.

Once a unit of measurement is used, it should be used uniformly in the Financial Statements.

5. Except in the case of the first Financial Statements laid before the Company (after its incorporation) the corresponding amounts (comparatives) for the immediately preceding reporting period for all items shown in the Financial Statements including notes shall also be given.
6. For the purpose of this Schedule, the terms used herein shall be as per the applicable Accounting Standards.

**Notes**

This part of Schedule sets out the minimum requirements for disclosure on the face of the Balance Sheet, and the Statement of Profit and Loss (hereinafter referred to as "Financial Statements" for the purpose of this Schedule) and Notes. Line items, sub-line items and sub-totals shall be presented as an addition or substitution on the face of the Financial Statements when such presentation is relevant to an understanding of the company's financial position or performance or to cater to industry/sector-specific disclosure requirements or when required for compliance with the amendments to the Companies Act or under the Accounting Standards.

**PART I – Form of BALANCE SHEET**

Name of the Company.....

Balance Sheet as at.....

(Rupees in.....)

Particulars	Note No.	Figures as at the end of current reporting period	Figures as at the end of the previous reporting period
1	2	3	4

**I. EQUITY AND LIABILITIES****(1) Shareholders' funds**

- (a) Share capital
- (b) Reserves and surplus
- (c) Money received against  
share warrants

**(2) Share application money  
pending allotment****(3) Non-current liabilities**

- (a) Long-term borrowings
- (b) Deferred tax liabilities (Net)
- (c) Other Long term liabilities
- (d) Long-term provisions

**(4) Current liabilities**

- (a) Short-term borrowings
- (b) Trade payables
- (c) Other current liabilities
- (d) Short-term provisions

**TOTAL**

**II. ASSETS****(1) Non-current assets**

- (a) Fixed assets
  - (i) Tangible assets
  - (ii) Intangible assets
  - (iii) Capital work-in-progress
  - (iv) Intangible assets under development
- (b) Non-current investments
- (c) Deferred tax assets (net)
- (d) Long-term loans and advances
- (e) Other non-current assets

**(2) Current assets**

- (a) Current investments
- (b) Inventories
- (c) Trade receivables
- (d) Cash and cash equivalents
- (e) Short-term loans and advances
- (f) Other current assets

**TOTAL**

**See accompanying notes to the financial statements**

**Notes****GENERAL INSTRUCTIONS FOR PREPARATION OF BALANCE SHEET**

1. An asset shall be classified as current when it satisfies any of the following criteria:
  - (a) it is expected to be realized in, or is intended for sale or consumption in, the company's normal operating cycle;
  - (b) it is held primarily for the purpose of being traded;
  - (c) it is expected to be realized within twelve months after the reporting date;  
or
  - (d) it is cash or cash equivalent unless it is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

All other assets shall be classified as non-current.

2. An operating cycle is the time between the acquisition of assets for processing and their realization in cash or cash equivalents. Where the normal operating cycle cannot be identified, it is assumed to have a duration of 12 months.

3. A liability shall be classified as current when it satisfies any of the following criteria:
  - (a) it is expected to be settled in the company's normal operating cycle;
  - (b) it is held primarily for the purpose of being traded;
  - (c) is due to be settled within twelve months after the reporting date; or
  - (d) the company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.All other liabilities shall be classified as non-current.
4. A receivable shall be classified as a 'trade receivable' if it is in respect of the amount due on account of goods sold or services rendered in the normal course of business.
5. A payable shall be classified as a 'trade payable' if it is in respect of the amount due on account of goods purchased or services received in the normal course of business.
6. A company shall disclose the following in the notes to accounts:

*A. Share Capital*

For each class of share capital (different classes of preference shares to be treated separately):

- (a) the number and amount of shares authorized;
- (b) the number of shares issued, subscribed and fully paid, and subscribed but not fully paid;
- (c) par value per share;
- (d) a reconciliation of the number of shares outstanding at the beginning and at the end of the reporting period;
- (e) the rights, preferences and restrictions attaching to each class of shares including restrictions on the distribution of dividends and the repayment of capital;
- (f) shares in respect of each class in the company held by its holding company or its ultimate holding company including shares held by or by subsidiaries or associates of the holding company or the ultimate holding company in aggregate;
- (g) shares in the company held by each shareholder holding more than 5 percent shares specifying the number of shares held;
- (h) shares reserved for issue under options and contracts/commitments for the sale of shares/disinvestment, including the terms and amounts;
- (i) For the period of five years immediately preceding the date as at which the Balance Sheet is prepared:
  - Aggregate number and class of shares allotted as fully paid up pursuant to contract(s) without payment being received in cash.

- Aggregate number and class of shares allotted as fully paid up by way of bonus shares.
- Aggregate number and class of shares bought back.
- (j) Terms of any securities convertible into equity/preference shares issued along with the earliest date of conversion in descending order starting from the farthest such date.
- (k) Calls unpaid (showing aggregate value of calls unpaid by directors and officers)
- (l) Forfeited shares (amount originally paid up)

#### *B. Reserves and Surplus*

- (i) Reserves and Surplus shall be classified as:
  - (a) Capital Reserves;
  - (b) Capital Redemption Reserve;
  - (c) Securities Premium Reserve;
  - (d) Debenture Redemption Reserve;
  - (e) Revaluation Reserve;
  - (f) Share Options Outstanding Account;
  - (g) Other Reserves - (specify the nature and purpose of each reserve and the amount in respect thereof);
  - (h) Surplus i.e. balance in Statement of Profit & Loss disclosing allocations and appropriations such as dividend, bonus shares and transfer to/from reserves etc.

(Additions and deductions since last balance sheet to be shown under each of the specified heads)
- (ii) A reserve specifically represented by earmarked investments shall be termed as a 'fund'.
- (iii) Debit balance of statement of profit and loss shall be shown as a negative figure under the head 'Surplus'. Similarly, the balance of 'Reserves and Surplus', after adjusting negative balance of surplus, if any, shall be shown under the head 'Reserves and Surplus' even if the resulting figure is in the negative.

#### *C. Long-Term Borrowings*

- (i) Long-term borrowings shall be classified as:
  - (a) Bonds/debentures.
  - (b) Term loans
    - from banks.
    - from other parties.
  - (c) Deferred payment liabilities.
  - (d) Deposits.
  - (e) Loans and advances from related parties.

- (f) Long term maturities of finance lease obligations
- (g) Other loans and advances (specify nature).
- (ii) Borrowings shall further be sub-classified as secured and unsecured. Nature of security shall be specified separately in each case.
- (iii) Where loans have been guaranteed by directors or others, the aggregate amount of such loans under each head shall be disclosed.
- (iv) Bonds/debentures (along with the rate of interest and particulars of redemption or conversion, as the case may be) shall be stated in descending order of maturity or conversion, starting from farthest redemption or conversion date, as the case may be. Where bonds/debentures are redeemable by installments, the date of maturity for this purpose must be reckoned as the date on which the first installment becomes due.
- (v) Particulars of any redeemed bonds/ debentures which the company has power to reissue shall be disclosed.
- (vi) Terms of repayment of term loans and other loans shall be stated.
- (vii) Period and amount of continuing default as on the balance sheet date in repayment of loans and interest, shall be specified separately in each case.

*D. Other Long Term Liabilities*

Other Long term Liabilities shall be classified as:

- (a) Trade payables
- (b) Others

*E. Long-term provisions*

The amounts shall be classified as:

- (a) Provision for employee benefits.
- (b) Others (specify nature).

*F. Short-term borrowings*

- (i) Short-term borrowings shall be classified as:
  - (a) Loans repayable on demand
    - from banks.
    - from other parties.
  - (b) Loans and advances from related parties.
  - (c) Deposits.
  - (d) Other loans and advances (specify nature).
- (ii) Borrowings shall further be sub-classified as secured and unsecured. Nature of security shall be specified separately in each case.
- (iii) Where loans have been guaranteed by directors or others, the aggregate amount of such loans under each head shall be disclosed.
- (iv) Period and amount of default as on the balance sheet date in repayment of loans and interest, shall be specified separately in each case.

### *G. Other current liabilities*

The amounts shall be classified as:

- (a) Current maturities of long-term debt;
- (b) Current maturities of finance lease obligations;
- (c) Interest accrued but not due on borrowings;
- (d) Interest accrued and due on borrowings;
- (e) Income received in advance;
- (f) Unpaid dividends
- (g) Application money received for allotment of securities and due for refund and interest accrued thereon. Share application money includes advances towards allotment of share capital. The terms and conditions including the number of shares proposed to be issued, the amount of premium, if any, and the period before which shares shall be allotted shall be disclosed. It shall also be disclosed whether the company has sufficient authorized capital to cover the share capital amount resulting from allotment of shares out of such share application money. Further, the period for which the share application money has been pending beyond the period for allotment as mentioned in the document inviting application for shares along with the reason for such share application money being pending shall be disclosed. Share application money not exceeding the issued capital and to the extent not refundable shall be shown under the head Equity and share application money to the extent refundable i.e., the amount in excess of subscription or in case the requirements of minimum subscription are not met, shall be separately shown under 'Other current liabilities'
- (h) Unpaid matured deposits and interest accrued thereon
- (i) Unpaid matured debentures and interest accrued thereon
- (j) Other payables (specify nature);

### *H. Short-term provisions*

The amounts shall be classified as:

- (a) Provision for employee benefits.
- (b) Others (specify nature).

### *I. Tangible assets*

(i) Classification shall be given as:

- (a) Land.
- (b) Buildings.
- (c) Plant and Equipment.
- (d) Furniture and Fixtures.
- (e) Vehicles.
- (f) Office equipment.
- (g) Others (specify nature).

(ii) Assets under lease shall be separately specified under each class of asset.

- (iii) A reconciliation of the gross and net carrying amounts of each class of assets at the beginning and end of the reporting period showing additions, disposals, acquisitions through business combinations and other adjustments and the related depreciation and impairment losses/reversals shall be disclosed separately.
- (iv) Where sums have been written off on a reduction of capital or revaluation of assets or where sums have been added on revaluation of assets, every balance sheet subsequent to date of such write-off, or addition shall show the reduced or increased figures as applicable and shall by way of a note also show the amount of the reduction or increase as applicable together with the date thereof for the first five years subsequent to the date of such reduction or increase.

*J. Intangible assets*

- (i) Classification shall be given as:
  - (a) Goodwill.
  - (b) Brands /trademarks.
  - (c) Computer software.
  - (d) Mastheads and publishing titles.
  - (e) Mining rights.
  - (f) Copyrights, and patents and other intellectual property rights, services and operating rights.
  - (g) Recipes, formulae, models, designs and prototypes.
  - (h) Licenses and franchise.
  - (i) Others (specify nature).
- (ii) A reconciliation of the gross and net carrying amounts of each class of assets at the beginning and end of the reporting period showing additions, disposals, acquisitions through business combinations and other adjustments and the related amortization and impairment losses/reversals shall be disclosed separately.
- (iii) Where sums have been written off on a reduction of capital or revaluation of assets or where sums have been added on revaluation of assets, every balance sheet subsequent to date of such write-off, or addition shall show the reduced or increased figures as applicable and shall by way of a note also show the amount of the reduction or increase as applicable together with the date thereof for the first five years subsequent to the date of such reduction or increase.

*K. Non-current investments*

- (i) Non-current investments shall be classified as trade investments and other investments and further classified as:
  - (a) Investment property;
  - (b) Investments in Equity Instruments;
  - (c) Investments in preference shares
  - (d) Investments in Government or trust securities;

- (e) Investments in debentures or bonds;
- (f) Investments in Mutual Funds;
- (g) Investments in partnership firms
- (h) Other non-current investments (specify nature)

Under each classification, details shall be given of names of the bodies corporate (indicating separately whether such bodies are (i) subsidiaries, (ii) associates, (iii) joint ventures, or (iv) controlled special purpose entities) in whom investments have been made and the nature and extent of the investment so made in each such body corporate (showing separately investments which are partly-paid). In regard to investments in the capital of partnership firms, the names of the firms (with the names of all their partners, total capital and the shares of each partner) shall be given.

- (ii) Investments carried at other than at cost should be separately stated specifying the basis for valuation thereof.
- (iii) The following shall also be disclosed:
  - (a) Aggregate amount of quoted investments and market value thereof;
  - (b) Aggregate amount of unquoted investments;
  - (c) Aggregate provision for diminution in value of investments

*L. Long-term loans and advances*

- (i) Long-term loans and advances shall be classified as:
  - (a) Capital Advances;
  - (b) Security Deposits;
  - (c) Loans and advances to related parties (giving details thereof);
  - (d) Other loans and advances (specify nature).
- (ii) The above shall also be separately sub-classified as:
  - (a) Secured, considered good;
  - (b) Unsecured, considered good;
  - (c) Doubtful.
- (iii) Allowance for bad and doubtful loans and advances shall be disclosed under the relevant heads separately.
- (iv) Loans and advances due by directors or other officers of the company or any of them either severally or jointly with any other persons or amounts due by firms or private companies respectively in which any director is a partner or a director or a member should be separately stated.

*M. Other non-current assets*

Other non-current assets shall be classified as:

- (i) Long Term Trade Receivables (including trade receivables on deferred credit terms);
- (ii) Others (specify nature)
- (iii) Long term Trade Receivables, shall be sub-classified as:
  - (i) (a) Secured, considered good;

- (b) Unsecured considered good;
- (c) Doubtful
- (ii) Allowance for bad and doubtful debts shall be disclosed under the relevant heads separately.
- (iii) Debts due by directors or other officers of the company or any of them either severally or jointly with any other person or debts due by firms or private companies respectively in which any director is a partner or a director or a member should be separately stated.

#### *N. Current Investments*

- (i) Current investments shall be classified as:
  - (a) Investments in Equity Instruments;
  - (b) Investment in Preference Shares;
  - (c) Investments in government or trust securities;
  - (d) Investments in debentures or bonds;
  - (e) Investments in Mutual Funds;
  - (f) Investments in partnership firms;
  - (g) Other investments (specify nature).

Under each classification, details shall be given of names of the bodies corporate (indicating separately whether such bodies are : (i) subsidiaries, (ii) associates, (iii) joint ventures, or (iv) controlled special purpose entities) in whom investments have been made and the nature and extent of the investment so made in each such body corporate (showing separately investments which are partly-paid). In regard to investments in the capital of partnership firms, the names of the firms (with the names of all their partners, total capital and the shares of each partner) shall be given.

- (ii) The following shall also be disclosed:
  - (a) The basis of valuation of individual investments
  - (b) Aggregate amount of quoted investments and market value thereof;
  - (c) Aggregate amount of unquoted investments;
  - (d) Aggregate provision made for diminution in value of investments.

#### *O. Inventories*

- (i) Inventories shall be classified as:
  - (a) Raw materials;
  - (b) Work-in-progress;
  - (c) Finished goods;
  - (d) Stock-in-trade (in respect of goods acquired for trading);
  - (e) Stores and spares;
  - (f) Loose tools;
  - (g) Others (specify nature).
- (ii) Goods-in-transit shall be disclosed under the relevant sub-head of inventories.
- (iii) Mode of valuation shall be stated.

*P. Trade Receivables*

- (i) Aggregate amount of Trade Receivables outstanding for a period exceeding six months from the date they are due for payment should be separately stated.
- (ii) Trade receivables shall be sub-classified as:
  - Secured, considered good;
  - Unsecured considered good;
  - Doubtful.
- (iii) Allowance for bad and doubtful debts shall be disclosed under the relevant heads separately.
- (iv) Debts due by directors or other officers of the company or any of them either severally or jointly with any other person or debts due by firms or private companies respectively in which any director is a partner or a director or a member should be separately stated.

*Q. Cash and cash equivalents*

- (i) Cash and cash equivalents shall be classified as:
  - Balances with banks;
  - Cheques, drafts on hand;
  - Cash on hand;
  - Others (specify nature).
- (ii) Earmarked balances with banks (for example, for unpaid dividend) shall be separately stated.
- (iii) Balances with banks to the extent held as margin money or security against the borrowings, guarantees, other commitments shall be disclosed separately.
- (iv) Repatriation restrictions, if any, in respect of cash and bank balances shall be separately stated.
- (v) Bank deposits with more than 12 months maturity shall be disclosed separately.

*R. Short-term loans and advances*

- (i) Short-term loans and advances shall be classified as:
  - Loans and advances to related parties (giving details thereof);
  - Others (specify nature).
- (ii) The above shall also be sub-classified as:
  - Secured, considered good;
  - Unsecured, considered good;
  - Doubtful.
- (iii) Allowance for bad and doubtful loans and advances shall be disclosed under the relevant heads separately.
- (iv) Loans and advances due by directors or other officers of the company or any of them either severally or jointly with any other person or amounts due by

firms or private companies respectively in which any director is a partner or a director or a member shall be separately stated.

**S. Other current assets (specify nature).**

This is an all-inclusive heading, which incorporates current assets that do not fit into any other asset categories.

**T. Contingent liabilities and commitments (to the extent not provided for**

- (i) Contingent liabilities shall be classified as:
  - (a) Claims against the company not acknowledged as debt;
  - (b) Guarantees;
  - (c) Other money for which the company is contingently liable
- (ii) Commitments shall be classified as:
  - Estimated amount of contracts remaining to be executed on capital account and not provided for;
  - Uncalled liability on shares and other investments partly paid
  - Other commitments (specify nature).

U. The amount of dividends proposed to be distributed to equity and preference shareholders for the period and the related amount per share shall be disclosed separately. Arrears of fixed cumulative dividends on preference shares shall also be disclosed separately.

V. Where in respect of an issue of securities made for a specific purpose, the whole or part of the amount has not been used for the specific purpose at the balance sheet date, there shall be indicated by way of note how such unutilized amounts have been used or invested.

W. If, in the opinion of the Board, any of the assets other than fixed assets and non-current investments do not have a value on realization in the ordinary course of business at least equal to the amount at which they are stated, the fact that the Board is of that opinion, shall be stated.

**PART-II—Form of STATEMENT OF PROFIT AND LOSS**

Name of the Company.....

Profit and Loss Statement for the year ended.....

(Rupees in.....)

Particulars	Note No.	Figures for the current reporting period	Figures for the previous reporting period
I Revenue from operations		xxx	xxx
II Other Income		xxx	xxx
III Total Revenue (I + II)		xxx	xxx
IV Expenses :		xxx	xxx

	Cost of materials consumed		
	Purchases of Stock-in-Trade		
	Changes in Inventories of finished goods		
	Work-in-progress and Stock-in-Trade		
	Employee benefits expense		
	Finance Costs		
	Depreciation and amortization expense		
	Other expenses		
	Total expenses		
V	Profit before exceptional and extraordinary items and tax (III-IV)	xxx	xxx
VI	Exception items	xxx	xxx
VII	Profit before extraordinary items and tax (V-VI)	xxx	xxx
VIII	Extraordinary Items	xxx	xxx
IX	Profit before tax (VII-VIII)	xxx	xxx
X	Tax expense :	xxx	xxx
	(1) Current tax		
	(2) Deferred tax		
XI	Profit (Loss) for the period from continuing operations (VII-VIII)	xxx	xxx
XII	Profit/(loss) from discontinuing operations	xxx	xxx
XIII	Tax expense of discontinuing operations	xxx	xxx
XIV	Profit/(loss) from Discontinuing operations (after tax)(XII-XIII)	xxx	xxx
XV	Profit (Loss) for the period (XI+XIV)	xxx	xxx
XVI	Earnings per equity share :	Xxx	xxx
	(1) Basic		
	(2) Diluted		

**See accompanying notes to the financial statements**

***GENERAL INSTRUCTIONS FOR PREPARATION OF STATEMENT OF PROFIT AND LOSS***

- The provisions of this Part shall apply to the income and expenditure account referred to in sub-section (2) of Section 210 of the Act, in like manner as they apply to a statement of profit and loss.
- (A) In respect of a company other than a finance company revenue from

operations shall disclose separately in the notes revenue from :

- (a) sale of products;
- (b) sale of services;
- (c) other operating revenues;

Less:

- (d) Excise duty.

(B) In respect of a finance company, revenue from operations shall include revenue from

- (a) Interest; and
- (b) Other financial services

Revenue under each of the above heads shall be disclosed separately by way of notes to accounts to the extent applicable.

### 3. Finance Costs

Finance costs shall be classified as:

- (a) Interest expense;
- (b) Other borrowing costs;
- (c) Applicable net gain/loss on foreign currency transactions and translation.

### 4. Other income

Other income shall be classified as:

- (a) Interest Income (in case of a company other than a finance company);
- (b) Dividend Income;
- (c) Net gain/loss on sale of investments
- (d) Other non-operating income (net of expenses directly attributable to such income).

### 5. Additional Information

A Company shall disclose by way of notes additional information regarding aggregate expenditure and income on the following items:-

- (i) (a) Employee Benefits Expense [showing separately (i) salaries and wages, (ii) contribution to provident and other funds, (iii) expense on Employee Stock Option Scheme (ESOP) and Employee Stock Purchase Plan (ESPP), (iv) staff welfare expenses].
- (b) Depreciation and amortization expense;
- (c) Any item of income or expenditure which exceeds one per cent of the revenue from operations or ₹1,00,000, whichever is higher;
- (d) Interest Income;
- (e) Interest Expense;
- (f) Dividend Income;
- (g) Net gain/ loss on sale of investments;
- (h) Adjustments to the carrying amount of investments;
- (i) Net gain or loss on foreign currency transaction and translation (other than considered as finance cost);

- (j) Payments to the auditor as: (a) auditor, (b) for taxation matters, (c) for company law matters, (d) for management services, (e) for other services, (f) for reimbursement of expenses;
- (k) Details of items of exceptional and extraordinary nature;
- (l) Prior period items;
- (ii) (a) In the case of manufacturing companies,-
  - Raw materials under broad heads.
  - Goods purchased under broad heads.
- (b) In the case of trading companies, purchases in respect of goods traded in by the company under broad heads.
- (c) In the case of companies rendering or supplying services, gross income derived from services rendered or supplied under broad heads.
- (d) In the case of a company, which falls under more than one of the categories mentioned in (a), (b) and (c) above, it shall be sufficient compliance with the requirements herein if purchases, sales and consumption of raw material and the gross income from services rendered is shown under broad heads.
- (e) In the case of other companies, gross income derived under broad heads.
- (iii) In the case of all concerns having works in progress, works-in-progress under broad heads.
- (iv) (a) The aggregate, if material, of any amounts set aside or proposed to be set aside, to reserve, but not including provisions made to meet any specific liability, contingency or commitment known to exist at the date as to which the balance-sheet is made up.
- (b) The aggregate, if material, of any amounts withdrawn from such reserves.
- (v) (a) The aggregate, if material, of the amounts set aside to provisions made for meeting specific liabilities, contingencies or commitments.
- (b) The aggregate, if material, of the amounts withdrawn from such provisions, as no longer required.
- (vi) Expenditure incurred on each of the following items, separately for each item:-
  - (a) Consumption of stores and spare parts.
  - (b) Power and fuel.
  - (c) Rent.
  - (d) Repairs to buildings.
  - (e) Repairs to machinery.
  - (f) Insurance.
  - (g) Rates and taxes, excluding, taxes on income.
  - (h) Miscellaneous expenses,
- (vii) (a) Dividends from subsidiary companies.

- (b) Provisions for losses of subsidiary companies.
- (viii) The profit and loss account shall also contain by way of a note the following information, namely:-
  - (a) Value of imports calculated on C.I.F basis by the company during the financial year in respect of :
    - (a) Raw materials;
    - (b) Components and spare parts;
    - (c) Capital goods;
  - (b) Expenditure in foreign currency during the financial year on account of royalty, know-how, professional and consultation fees, interest, and other matters;
  - (c) Total value if all imported raw materials, spare parts and components consumed during the financial year and the total value of all indigenous raw materials, spare parts and components similarly consumed and the percentage of each to the total consumption;
  - (d) The amount remitted during the year in foreign currencies on account of dividends with a specific mention of the total number of non-resident shareholders, the total number of shares held by them on which the dividends were due and the year to which the dividends related;
  - (e) Earnings in foreign exchange classified under the following heads, namely:-
    - (a) Export of goods calculated on F.O.B. basis;
    - (b) Royalty, know-how, professional and consultation fees;
    - (c) Interest and dividend;
    - (d) Other income, indicating the nature thereof

**Note:** Broad heads shall be decided taking into account the concept of materiality and presentation of true and fair view of financial statements.

## 7. REQUIREMENT OF TRUE AND FAIR

The Companies Act requires that the profit and loss account must exhibit a true and fair view of the profit earned or loss suffered by the company during the period for which the account has been prepared. The term true and fair has not been defined nor had it been the subject of any judicial decision. But, on the whole, one may say that if on studying the profit and loss account properly, one should not be misled about the size of the profit or loss and the significant factors that have contributed to the profit situation. If the user is misled on either of these points, the profit and loss account cannot be treated as true and fair. One may argue that the legal requirement is merely that the information under Part II of Schedule VI to the Companies Act should be disclosed. However, this may not strictly be correct since the spirit of the law is clearly that the truth should be quite apparent.

Undoubtedly, the requirements of Part II of Schedule VI have to be complied with but one should remember that it is not required that the profit and loss account should

contain all the disclosures and should be absolutely correct. Both of these, absolute accuracy and complete disclosure are impossible to achieve. In fact that is why the profit and loss account has to be true and fair-a margin of inaccuracy, arising out of estimates that are unavoidable, is permissible. Further, every little thing disclosed will merely cloud the picture; hence disclosure of only material things together with clubbing of small details is not only permissible but recommended.

From the accounting point of view, the profit and loss account should be drawn upon the principles stated below:

(a) *Materiality*: All significant factors which will have an impact on the mind of the reader should be disclosed. For example, if a large quantity of raw materials is sold and there is a sizable profit or loss, the sale should not be included in the Sales Account; instead, the cost of the materials should be deducted from materials consumed and the profit or loss on sale of raw materials should be separately disclosed in the profit and loss account. The reader will then know why the profit or loss is and what it is; the reason will not be clear if the sale of raw materials is added to Sales or deduced from materials consumed. If, however, only a small quantity was sold leading to a rather insignificant profit or loss, separate disclosure is not necessary because such a disclosure will not change the impression of the reader about the profit situation.

What is material and what is not depends upon the judgement of the management. But the materiality of a figure should be judged from the point of view of both the total amount of the item and the amount of the profit or loss. In the above example, materiality has to be seen from the point of view of (i) the amount of materials consumed and (ii) the profit or loss during the year.

(b) *Prior-Period Items*: The rule in India is that once accounts are adopted at the annual general meeting, they cannot be reopened. If any error is discovered, it can be corrected only in the accounts of the subsequent period. Apart from errors, some of the account relating to previous year may come to knowledge or may be ascertained only in the current year. Suppose rates have been revised with effect from October, 2006 but the decision was made only in March, 2008, The increased wages for 2007-08 can certainly be added to the 2007-2008 wages but the increased wages for six months of 2006-2007 will also have to be taken out into account. Errors and other items relating to previous year should be shown separately in the profit and loss account and not clubbed with the item relating to the current year unless the concerned amounts are not material. Preferably, errors and prior year items should be stated below the line i.e. in the Profit and Loss Appropriation Account.

(c) *Extraordinary Items*: If expenses or incomes that do not arise in the ordinary course and are material should be stated separately in the profit and loss account. For example, if a fixed asset is sold, its profit or loss has to be shown separately. Another example would be speculation loss or profit; yet another would be subsidy received from government for operational purposes.

(d) *Change in Accounting Policies*: It is well known that if there is any change in an accounting policy, say method of valuation of inventories or of change in

depreciation, there has to be disclosure about the fact of the change and of the fact on profit or loss resulting from such a change.

## 8. TREATMENT OF SPECIAL ITEMS WHILE PREPARING THE FINAL ACCOUNTS

Although, the general principles for preparing the final accounts of a company are the same as partnership firms and sole proprietorship concerns, some special points relating to the items peculiar to a company are worth nothing. Those special points are:

### 8.1 Provisions and Reserves

*Provisions* - The Companies Act, 1956 in its Schedule VI, Part III states clearly that the expression "Provision" shall mean any amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets or retained by way of providing for any known liability of which the amount cannot be determined with substantial accuracy.

It follows from the above that a provision may be made either -

- (i) to meet any loss in any respect of depreciation and renewals of assets or diminution in the value of assets like investments or
- (ii) to meet any known liability in respect of which the amount cannot be determined accurately, like contingent liability for taxes yet to be assessed, etc.

A few examples of provisions are - Provision for Depreciation, Provision for Repairs and Renewals, Provision for Bad and Doubtful Debts, Provisions for Fluctuations in Investments, Provision for Contingent Liability, Provision for Taxation, etc.

Thus, provisions are definitely charge against profits and as such, they should be shown above the line, i.e., in the Profit and Loss Account proper.

It is important to note here that the provisions made in excess of the required amount will be regarded as reserves and not as provisions.

*Reserves* - The expressions "reserve" has been negatively defined in Part III of Schedule VI of the Companies Act as follows:

"The expression 'reserve' shall not include any amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets or retained by way of providing for any known liability."

It follows from the above that reserves refer to amounts set aside out of profits or surplus of the company which are neither meant to meet any loss in respect of depreciation, renewals or diminution in the value of assets nor meant to meet any known liability.

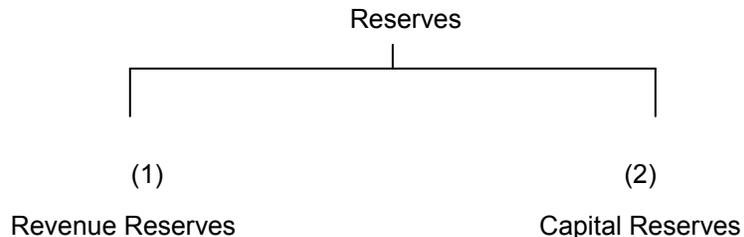
A reserve therefore, by implication represents undistributed profits. It is, thus evident that reserves are appropriation of profits and not charge against profits. As such transfer to reserves must be shown in the appropriation section of the Profit and Loss Account, i.e., below the line.

A reserve fund is a reserve which is represented by investments outside the business. Sinking fund for the redemption of debentures is an instance of reserve fund.

Distinction between provisions and reserves can be put as follows:

<i>Provision</i>	<i>Reserve</i>
1. It is created for specific purpose.	It is created for probable losses.
2. It is a charge to profit and loss account	It is an appropriation of profit
3. It cannot be distributed as profit	It can be distributed as dividend
4. It cannot be invested in securities	It can be invested in securities
5. It is made because of legal necessity	It is a matter of financial prudence
6. Provision is shown by way of deduction from the amount of the items for which it is created.	It is shown separately under Reserves and Surplus on the liabilities side of the balance sheet.

Reserve may be of various types which may be classified as follows:



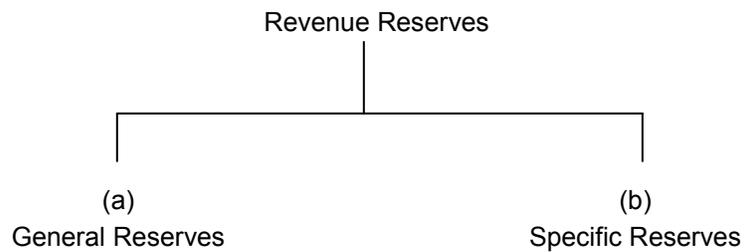
Reserves created out of revenue profits by debiting profit and loss appropriation account are called Revenue Reserves.

Revenue reserves are profits retained to strengthen the financial position of the company or to retain funds (generated by operations) for a particular purpose.

Reserves created out of capital profits (i.e., profits earned not in the usual course of the business) are called Capital Reserves.

Capital Reserves are created out of the following capital profits:

- (i) Profits prior to incorporation.
- (ii) Premium on issue of debentures.
- (iii) Profits on redemption of debentures
- (iv) Profit on forfeiture of shares.
- (v) Profit on sale of fixed assets.
- (vi) Profit on revaluation of fixed assets or liabilities.



If the purpose of creating the reserve by setting aside a portion of the profits every year is to meet any unforeseen contingency in future or to utilise the same for expansion of the business, the reserve thus created, is called General Reserve.

If the purpose of creating the reserve by setting aside a portion of the profits every year is specific or definite, the reserve thus created is called Specific Reserve, for example, Dividend Equalisation Reserve.

## 8.2 Provision for Depreciation

Part II of Schedule VI of the Companies Act, 1956 requires that the Profit and Loss Account must disclose the amount provided for depreciation, renewals or diminution in value of fixed assets. If such provision is not made by means of a depreciation charge, the method adopted for making such provision should be stated. But where no provisions is made for depreciation, the fact that no provision, has been made, must be stated and the quantum of arrears of depreciation computed in accordance with Section 205(2) of the Act, is also to be stated by way of a note.

Section 205(2) of the Companies Act, 1956 states that depreciation should be provided either:

- (a) to the extent specified in Section 350;
- (b) in respect of each item of depreciable asset for such an amount as is arrived at by dividing 95 per cent of the original cost to the company by the specified period in respect of such assets; or
- (c) on any other basis approved by the Central Government which has the effect of writing off by way of depreciation 95 per cent of the original cost to the company of each such depreciable assets on the expiry of the specified period; or
- (d) as regards any other depreciable asset for which no rate of depreciation has been laid down by this Act or any rules made thereunder, on such basis as may be approved by the Central Government by any general order published in the Official Gazette or any special order in any particular case:

Provided that if any of the aforesaid assets is sold, discarded, demolished or destroyed, the excess (if any) of the written-down value of such asset over its sale proceeds or, as the case may be, its scrap value; must be written off in the financial year in which the asset is sold, discarded, demolished or destroyed.

Depreciation may be provided either on the written-down value basis at the rates specified in Schedule XIV of the Act or on straight line basis. In straight line basis, depreciation may be calculated by dividing 95% of the original cost of the asset by its specified period. Specified period means the number of years at the end of which at least 95% of the original costs of that asset will have been provided by way of depreciation if depreciation were to be calculated in accordance with the provisions of Section 350.

The amount of depreciation charged on the assets every year is debited to the Profit and Loss Account and the Provision for Depreciation Account which is allowed to accumulate from year to year. The accounting entries required for this will be as follows:

(1) When depreciation is charged on assets -

Depreciation A/c	Dr.	(with the amount of depreciation)
To Provision for Depreciation A/c		

(2) When depreciation is taken to the Profit and Loss Account -

Profit and Loss A/c	Dr.	(with the amount of depreciation)
To Depreciation A/c		

The net effect of the above two entries will be -

Profit and Loss Account	Dr.	(with the amount of depreciation)
To Provision for Depreciation A/c		

**Notes:** (1) If any asset is sold, discarded, demolished or destroyed, the proportionate amount of depreciation relating to the asset must be transferred from the Provision for Depreciation Account to the Asset Disposal Account. For this the entry will be -

Provision for Depreciation A/c	Dr.	(with the proportionate amount of depreciation)
To Asset Disposal A/c		

(2) When the excess of the written down value of the asset sold; discarded demolished or destroyed over the sale proceeds or scrap value is written off the following entry is required -

Profit and Loss Account	Dr.	(with the loss)
To Asset Disposal A/c		

This entry will be reversed if the sale proceeds of the asset sold are greater than its written down value. But the excess of sale proceeds over the original cost of the asset is capital profit and should be credited to Capital Reserve.

(3) If depreciation appears in the trial balance as a debit balance, it implies that the credit has already been given to Provision for Depreciation Account.

(4) If any asset is purchased during the accounting period, depreciation may be provided for the full year and in such a case a note may be given to this effect. However, according to accounting principles, depreciation should be provided only for the period the asset was in use.

(5) Depreciation relating to past years should be treated as appropriation of profits and not charge against profits.

(6) Any change in the method of providing for depreciation should be disclosed along with the quantum of effect on the profit/loss of the company.

### 8.3 Provision for Repairs, Renewals and Replacements

While considering the question of depreciation, a clear distinction should be made between the cost of upkeep in the shape of repairs and small renewals and the cost of large renewals or the entire replacement of the asset concerned.

(a) *Cost of Repairs and Renewals:* The cost of upkeep should be charged to revenue in addition to the necessary provision for depreciation. The current expenditure by way of repairs is necessary to preserve the life of the asset to the extent of its normal estimated life. Actually speaking, this is based upon which the rate of depreciation is determined, otherwise the rate of depreciation would have been much higher. As a consequence, it is essential that the cost of current repairs should be charged to revenue.

It also important to consider whether it is necessary to provide for future expenditure on repairs during the early years of the life of an asset. It is a recognised fact that the expenditure on repairs in the early years of the life of an asset is much less as compared to the subsequent years of its life. Where large sums are involved, the best method is to estimate the total expenditure on repairs during the whole life of the asset and to average it by dividing the total estimate expenditure by the number of years of its estimated life. This average estimated expenditure on repairs is debited every year to the Profit and Loss Account and credited to either "Provision for Repairs and Renewals Account" or to "Provision for Maintenance Account". The actual expenditure on repairs as and when it is incurred is debited to Provision for Repairs and Renewals Account and credited to bank. Thus, the following two entries are required:

1. When provision is made for repairs and renewals -

Profit and Loss A/c	Dr.	(with the average estimated
To Provision for Repairs and		expenditure)
Renewals A/c		

2. When actual expenditure is incurred on repairs -

(i) Repairs and Renewals A/c	Dr.	(with the actual expenditure as and
To Bank		when made)

(ii) Provision for Repairs and		
Renewals A/c	Dr.	(transfer of the total sum to the
To Repairs and Renewals A/c		provision at the end of the year)

The balance of the Provision for Repairs for Renewals Account will be carried forward and shown on the liabilities side of the Balance Sheet under the head



(2) The annual amount to be debited to Profit and Loss Account every year will be  $\text{₹} \frac{1,00,000}{10} = \text{₹}10,000$ .

(3) Although, a provision of ₹10,000 will be made every year in the Profit and Loss Account of the company, for the purpose of determining the net profit for calculation of managerial remuneration the excess of provision over actual expenditure has to be added back to the profits.

(b) *Cost of Replacement and Provision for Replacement*: Replacement of an asset represents the complete exhaustion of the capital invested in the asset. It involves the expenditure of large sums for the replacement of the asset. The annual charge of depreciation spreads this cost equitably over the life of the asset.

An important point to be noted here is that where the cost of replacement of the asset is estimated to exceed the original cost of the asset, it raises the question as to whether depreciation should be calculated on the original cost of the asset or on the replacement cost of the asset (i.e. the amount required to replace the asset by a new one).

Since one of the important objects of providing for depreciation is to collect funds for replacement cost of the asset, it seems quite logical that the depreciation should be charged on the replacement cost of the asset. But this principle cannot be followed in practice due to the restrictions imposed by the Companies Act, 1956.

According to the Companies Act, 1956, depreciation has to be calculated on the original cost of the asset. Part III of Schedule VI of the Companies Act further states that where any amount written off or retained by way of providing for depreciation in excess of the amount which is necessary for the purpose, the excess shall be treated as a reserve and not as a provision. Besides, depreciation is also not admissible on replacement cost basis under the Income-tax Act, 1961.

Under the circumstances, if it is not possible for the company to raise further capital required to meet the excess expenditure on replacement of the asset, the company may decide to create a reserve called "Replacement Reserve" out of the profits of the company for the excess amount over the original cost of the asset. Such a reserve is an appropriation of profits and not a charge against profits and therefore, should be shown below the line. "Replacement Reserve Account" should be shown as accumulated profits on the liabilities side of the Balance Sheet under the head "Reserve and Surplus".

Providing for depreciation every year has the effect of generating funds within the business of the company with a view to replacing the asset at the end of its useful life. These funds may be used within the business of the company or invested outside the business of company. If the funds are used within the business of the company, the same does not ensure that cash will be available, when required, to replace the asset, as the funds may be represented by other business asset which may not be readily realised.

In order to ensure that the cash is readily available at the time of replacement of the asset, it is desirable that the funds should be invested outside the business of the

company. This can be done in the following two ways:

- (i) By investing the funds every year in readily convertible securities known as the Sinking Fund or Depreciation Fund Method.
- (ii) By taking out an insurance policy.

#### 8.4 Provision for Taxation and Advance Payment of Tax

Under Clause 3(vi) of Part II, Schedule VI, the Profit and Loss Account of a company must set out the amount of charge for income-tax and other taxation on profits, including where practicable, with Indian Income-tax, any taxation imposed elsewhere to the extent of the relief, if any, from Indian Income-tax and distinguishing, where practicable, between income-tax and other taxation".

A company is liable to pay income-tax or tax on profits under the Income-tax Act, 1961 and such tax is treated as charge against the profits of the accounting year, although the profits are assessed and actual liability for tax is determined in the following year. As such, the liability for tax is estimated and provided for while preparing the final accounts. The estimated amount of tax is debited to the Profit and Loss Account proper, i.e., above the line and is credited to "Provision for Taxation Account" which is shown on the liabilities side of the Balance Sheet under the head "Current Liabilities and Provisions". The accounting entry required for this will be as follows:

Profit and Loss A/c To Provision for Taxation A/c	Dr.	(with the estimated amount of tax liability)
--	-----	--

While making the estimate of provision for taxation, due consideration should be given to the following points:

- (i) Whether the net profit has been determined after deducting depreciation according to Income-tax Act and managerial remuneration.
- (ii) Whether income-tax has been computed at the rates prescribed.
- (iii) Whether profit sur-tax is payable or not.
- (iv) Whether capital gains tax is payable or not.
- (v) Whether penalty is payable under any tax laws.
- (vi) Whether rebates are available for double taxation.
- (vii) Whether investment allowance, extra shift allowance, etc., if any, have been duly deducted or not in estimating the tax liability, and whether the required amount has been transferred to the Investment Allowance Reserve Account.
- (viii) Whether adjustment has made for the last year's actual tax liability or not.

*Advance Payment of Tax:* All the companies are required to make advance payment of tax in the accounting year itself subject to adjustment against the actual liability as and when determined. The accounting entry for such payment will be as follows:

Advance Payment of Tax A/c To Bank A/c	Dr.	(with the amount of advance tax paid)
---	-----	---------------------------------------

Until and unless the actual tax liability is determined and adjusted against advance payment of tax, "Advance Payment of Tax Account" will show a debit balance which may be shown in the Balance Sheet either on the assets side under the head "Current Assets, Loans and Advances" or, alternatively, on the liabilities side as a deduction from "Provision for Taxation Account" under the head "Current Liabilities and Provisions".

When the profits of the company are assessed at a subsequent date and the actual tax liability is determined. Advance Payment of Tax Account relating to the period concerned is closed by transfer to Provision for Taxation Account. For this, the accounting entry will be as follows:

Provision for Taxation A/c	Dr.	(with the amount of advance
To Advance Payment of Tax A/c		payment of tax)

If the actual tax liability is more or less than the provision made in the previous year, the difference has to be adjusted through the appropriation section of the Profit and Loss Account (i.e. below the line) by debiting or crediting the Provision for Taxation Account. The accounting entry for this will be as follows -

(a) If the actual tax liability more than the provision made last year -

Profit and Loss Appropriation A/c	Dr.	(with the difference)
To Provision for Taxation A/c		

(b) If the actual tax liability is less than the provision made last year:

Provision for Taxation A/c	Dr.	(with the difference)
To Profit and Loss Appropriation A/c		

If the advance payment of tax made for the previous year is less than the actual tax liability, the difference has to be treated as the liability for taxation until it is paid and should be shown on the liabilities side of the Balance Sheet under the head "Current Liabilities". In such a case, the balance of the Provision for Taxation Account for the previous year may be transferred to "Liabilities for Taxation Account". The accounting entry for this will be as follows:

Provision for Taxation A/c	Dr.	(with the net liability)
To Liabilities for Taxation A/c		

In case of payment -

Liabilities for Taxation A/c	Dr.	(with the amount paid)
To Bank		

On the other hand, if the advance payment of tax made for the previous year is more than the actual tax liability, the balance left in the Advance Payment of Tax Account has to be shown as an asset on the asset side of the Balance Sheet under the head "Current Assets, Loans and Advances" and a refund claim has to be furnished for the same. On receipt of the refund claim, the accounting entry will be as follows:

Bank	Dr.	(with the amount of refund)
To Advance Payment of Tax A/c		

**Illustration 2**

The Trial Balance of Simplex Ltd. as at 31st March, 2011 shows the following items:

	<i>Dr.</i> ₹.	<i>Cr.</i> ₹..
Provision for Income-tax Account (1.4.2010)		60,000
Advance Payment of Tax Account	1,10,000	

You are also given the following information:

- (1) Advance Payment of Tax Account includes ₹70,000 for 2009-10.
- (2) Actual tax liability for 2009-10 amounts to ₹76,000 and no effect for the same has so far been given in accounts.
- (3) Provision for Income-tax has to be made for 2010-11 for ₹80,000.

Prepare the various ledger accounts involved and also show how the relevant items will appear in the balance sheet of the company.

**Solution:****Provision for Income-tax Account**

<i>Dr.</i>		<i>Cr.</i>		
	₹.	₹.		
31.3.2011	To Advance Payment of Tax A/c	1.4.2010	By Balance b/d	60,000
	To Liabilities for Taxation A/c	31.3.2011	By Profit and Loss Appropriation A/c (excess amount payable)	<u>16,000</u>
				<u>76,000</u>
31.3.2011	To Balance c/d	31.3.2011	By Profit and Loss A/c	<u>80,000</u>
				<u>80,000</u>

**Advance Payment of Tax A/c**

<i>Dr.</i>		<i>Cr.</i>		
	₹.	₹.		
31.3.2011	To Balance b/d	31.3.2011	By Provision for Income-tax A/c	70,000
		31.3.2011	By Balance c/d	<u>40,000</u>
				<u>1,10,000</u>

**Liabilities for Taxation Account**

<i>Dr.</i>		<i>Cr.</i>		
	₹.	₹.		
31.3.2011	To Balance c/d	31.3.2011	By Provision for Income-tax A/c	<u>6,000</u>
				<u>6,000</u>

**Profit and Loss Account for the year ended March, 2011**

	₹.		₹.
To Provision for Income-tax A/c	80,000		?
	?		?
To Provision for Income-tax A/c	16,000	By Net Profit b/d	?

**Balance Sheet of Simplex Ltd. as at 31st March, 2011**

<i>Liabilities</i>	₹.	<i>Assets</i>	₹.
A. Current Liabilities		Loans and Advances	
Liabilities for Taxation (2009-10)	6,000	Advance Payment of tax (2010-11)	40,000
B. Provisions:		Miscellaneous Expenses	?
Provision for Income-tax (2010-11)	80,000		

**9. MANAGERIAL REMUNERATION**

Remuneration in whatsoever form to managerial personnel, i.e., directors, managing director or manager of a company is a charge against profit and is shown on the debit side of the Profit and Loss Account proper, i.e., above the line. Remuneration may be paid by way of fee for attending the meeting of the Board, monthly salary and a fixed percentage of the net profits of the company, etc.

**10. LEGAL RESTRICTIONS**

Over all limits of managerial remuneration:

(a) *Maximum Limit:* Section 198 of the Companies Act, 1956 puts a maximum limit of 11% of the net profits in any financial year on the total managerial remuneration payable by a public company or a private company which is a subsidiary of a public company to its directors including any managing or whole-time director or manager.

The above ceiling of 11% of the net profits does not include any fees payable to directors for attending the meetings of the Board or Committee of the Board [Section 198(2)].

The net profits of the company for calculating managerial remuneration have to be ascertained in the manner laid down in Section 349 and 350 of the Companies Act, 1956, except that the remuneration of directors shall not be deducted from gross profits.

(b) *Minimum Limit:* Sub-section 4 of Section 198 as amended by the Companies (Amendment) Act, 1988, provides that subject to the provisions of section 269, read with Schedule XIII, if, in any financial year, a company has no profits or its profits are inadequate, the company shall not pay to its directors, including any managing or whole-time director or manager, by way of remuneration any sum [exclusive of any

fees payable to directors under Sub-section (2) of Section 309], except with the previous approval of the Central Government.

The remuneration specified in Section II of Part II of schedule XIII is "minimum remuneration" for the purpose of Section 198 of the Companies Act, which would be admissible in the event of absence or inadequacy of net profits in any financial year, without the approval of the Central Government in individual cases. In other words, no separate approval of the Central Government would be required under Section 198(4) and 309(3) of the Companies Act, provided the remuneration paid to a managerial person in the event of absence or inadequacy of net profits in any financial year is in accordance with the provision of Section II of Part II of Schedule XIII.

*Perquisites or benefits which are to be included in the Managerial Remuneration:*

The following perquisites or benefits provided by the company to its managerial staff have to be included in managerial remuneration:

- (a) any expenditure incurred by the company in providing any rent free accommodation, or any other benefit or amenity in respect of accommodation free of charge;
- (b) any expenditure incurred by the company in providing any other benefit or amenity free of charge or at a concessional rate;
- (c) any expenditure incurred by the company in respect of any obligation or service which, but for such expenditure by the company, would have been paid by them; and
- (d) any expenditure incurred by the company in effecting any insurance on the life of, or in providing any pension, annuity or gratuity for the managerial staff or his spouse or child.

It is important to note here that no company can now pay to any of its officers or employees remuneration free of any tax or varying with any tax payable by him under Section 200 of the Companies Act, 1956.

Schedule XIII of the Companies Act, 1956 lays down the condition relating to appointment and remuneration of managerial personnel. This Schedule has been amended from time to time.

## **11. REMUNERATION TO DIRECTORS**

Section 309 of the Companies Act, 1956 contains the provisions relating to the remuneration payable to the directors including any managing director or whole-time director of a public company and a private company which is a subsidiary of a public company which are as follows:

- (a) A director may be paid fee for attending each meeting of the board or a committee thereof attended by him.
- (b) A whole-time director or a managing director may be paid remuneration either by way of a monthly payment or at a specified percentage of the net profits of the company or partly by one way and partly by the other. But except with the approval of the Central Government such remuneration shall not exceed:
  - (i) 5% of the net profits for one such director; and

- (ii) 10% of the net profits for all of them put together, if there is more than one such director.
  - (c) in the case of a part time director (not being a managing director) who does not receive remuneration by way of a monthly payment, the company may by special resolution, authorise the payment of commission to such director or directors in the following manner:
    - (i) Not exceeding 1% of the net profits of the company, where the company has a managing director or whole-time director or a manager; and
    - (ii) Not exceeding 3% of the net profit of the company, in any other case.
- These rates can, however, be increased by the company in general meeting with the approval of the Central Government. The special resolution passed by the company as aforesaid will remain valid for a period of 5 years.
- (d) The net profits of the company for the above purposes should be calculated in the manner laid down in Sections 349 and 350 without deducting the director's remuneration from the gross profits.
  - (e) A director, who is in receipt of any commission from the company and who is either a managing director or whole-time director, is not entitled to receive any commission or other remuneration from any subsidiary of such company.

Section 310 of the Companies Act, 1956 provides that any increase in the remuneration of any director of a public company or a private company which is a subsidiary of a public company, shall not be valid.

- (i) In cases where Schedule XIII is applicable, unless such increase is in accordance with the conditions specified in that schedule; and
- (ii) in any other case, unless it is approved by the Central Government.

It is important to note here that the remuneration payable to the directors including any managing director or whole-time director of a public company and its subsidiary shall be determined by the articles of the company or by a resolution of the company subject to the provisions of Sections 198 and 309 of the Companies Act.

## **12. REMUNERATION TO MANAGER**

Sections 387 of the Companies Act, 1956 contains the provisions relating to the remuneration payable to the manager of a public company or its subsidiary which are as follows:

- (a) A manager may receive remuneration by way of a monthly payment or by way of a specific percentage of the net profits of the company or partly by way of monthly payment and partly by way of specific percentage of the net profits of the company.
- (b) The total remuneration can not exceed 5% of the net profits of the company except with the approval of the Central Government.
- (c) The net profits of the company are to be calculated in the manner laid down in Section 349 and 350 of the Companies Act, 1956.

A company cannot have more than one manager at a time.

To sum up the discussion on managerial remuneration, the following statutory rates should be remembered:

	<i>Maximum limit</i>
1. Overall managerial remuneration (exclusive of fee for attending meetings)	11% of the Net Profit
2. If the company has one managing director or whole-time director	5% of the Net Profit
3. If the company has more than one Managing director or whole-time director (for all of them)	10% of the Net Profit
4. Remuneration of part-time directors where the company has no managing director (for all of them)	3% of the Net Profit
5. Remuneration of part-time director where the company has one or more managing director (for all of them)	1% of the Net Profit
6. Remuneration to the manager	5% of the Net Profit

**Note:** It is important to note here that the Companies Act, 1956, prescribes the maximum limit of overall managerial remuneration and of remuneration payable to various managerial personnel. But a company is at liberty to fix up the managerial remuneration at a rate within those prescribed limits. The company is, also at liberty to calculate the managerial remuneration either (i) on the net profits of the company before charging such remuneration, or (ii) on the net profits of the company after charging such commission. In effect, the Company Law Board has laid down limits for managerial remuneration and perquisites.

If nothing is mentioned in the problem as to whether the managerial remuneration is to be calculated on the net profits of the company before charging such remuneration or after charging such remuneration, it is always to be assumed that the remuneration has to be calculated on the net profits before charging such remuneration.

### **13. DETERMINATION OF NET PROFIT FOR CALCULATION OF MANAGERIAL REMUNERATION**

Sections 349 and 350 of the Companies Act contain the provisions relating to the manner of determination of net profits for the purpose of calculating the managerial remuneration. All these provisions are based on sound accounting principles and practice.

The provisions of the above sections require that in computing net profits of a company in any financial year for the purpose of calculating managerial remuneration the following points should be considered:

- (1) Credit shall be given for -

Bounties and subsidies received from any Government or any public authority constituted or authorised in this behalf by the Government unless the Central Government otherwise directs.

(2) Credit shall not be given for the following sums:

- (a) profits, by way of premium, on shares or debentures of the company which are issued or sold by the company;
- (b) profits on sales by the company of forfeited shares;
- (c) profits of capital nature including profits from the sale of the undertaking or any of the undertakings of the company, or of any part thereof;
- (d) profits from the sale of any immovable property or fixed assets of a capital nature comprised in the undertaking or any of the undertakings of the company unless the business of the company consists, whether wholly or partly, of buying and selling any such property or assets.

Provided that where the amount for which any fixed assets is sold exceeds the written down value thereof referred to in Section 350, credit shall be given so much of the excess as is not higher than the difference between the original cost of that fixed assets and its written down value.

(3) The following sums shall be deducted:

- (a) all the usual working charges;
- (b) director's remuneration;
- (c) bonus or commission paid or payable to any member of the company's staff, or to any engineer, technician or person employed or engaged by the company, whether on a whole-time or on a part-time or on a part-time basis;
- (d) any tax notified by the Central Government as being in the nature of a tax on excess or abnormal profits;
- (e) any tax on business profits imposed for special reasons or in special circumstances and notified by the Central Government in this behalf;
- (f) interest on debentures issued by the company;
- (g) interest on mortgages executed by the company and on loans and advances secured by a charge on its fixed or floating assets;
- (h) interest on unsecured loans and advances;
- (i) expenses on repairs, whether to immovable or to movable property, provided the repairs are not of a capital reserve;
- (j) outgoings, inclusive of contributions made under Clause (e) of Sub-section (1) of Section 293 which states as follows:

—The Board of directors of a public company or of a private company which is a subsidiary of a public company, shall not, except with the consent of such public company or subsidiary in general meeting, contribute to charitable and other funds not directly relating to the business of the company or the welfare of its employees, any amounts the aggregate of which will, in any financial year, exceed ₹. 50,000 or 5% of its average net profits as determined in accordance with the provision of Sections 349 and 350 during three financial years immediately proceeding, whichever is greater.”

- (k) depreciation to the extent specified in Section 350 which allows the following deductions:
- (i) normal depreciation including extra and multiple shift allowances calculated at the rates specified in the Schedule XIV;
  - (ii) excess of written down value over the sale proceeds or scrap value of the asset if it is sold, discarded, demolished or destroyed before the depreciation on such asset has been provided in full.

But Section 350 does not allow the following deductions -

- (i) Special depreciation.
  - (ii) Initial depreciation.
  - (iii) Development Rebate Reserve or Investment Allowance Reserve;
- (l) The excess of expenditure over income, which had been arisen in computing the net profits in accordance with Section 349 in any year which begins at or after the commencement of this Act, in so far as such excess has not been deducted in any subsequent year preceding the year in respect of which the net profits have to be ascertained;
- (m) any compensation or damages to be paid by virtue of any legal liability, including a liability arising from a breach of contract;
- (n) any sum paid by way of insurance against the risk of meeting any liability such as is referred to in clause (m);
- (o) debts considered bad and written off or adjusted during the year of account.
- (4) The following sums shall not be deducted:
- (a) income-tax and super-tax payable by the company under the Income- tax Act, 1961 or any other tax on the income of the company not falling under clauses (d) and (e) of (3) above;
  - (b) any compensation, damages or payments made voluntarily that is to say, otherwise than in virtue of a liability such as is referred to in clause (m) of (3) above.
  - (c) loss of a capital nature including loss on sale of the undertaking or any of the undertakings of the company or of any part thereof not including any excess referred to in the proviso to Section 350 of the written down value of any asset which is sold, discarded, demolished or destroyed over, its sale proceeds or its scarp value.

It is important to note here that the above provisions do not apply to a private company, unless it is subsidiary of a public company.

### Illustration 3

The following particulars are extracted from the Profit and Loss Accounts of Bharat Ltd. for the year ended 31st March, 2011:

- (i) Remuneration and perquisites paid to:
  - (a) Managing Director ₹75,000
  - (b) Whole-time Director ₹60,000

- (ii) Provision for bonus ₹5.5 lakhs and for gratuity ₹50,000, this includes provision for above Directors-Bonus ₹5,000 and gratuity ₹6,000.
- (iii) Provision for doubtful debts made during the year ₹30,000.
- (iv) Surplus on sale of building credited in the Profit and Loss Account ₹1,50,000. This includes a short term capital gain of ₹1,30,000.
- (v) Loss on sale of machinery debited in Profit and Loss Account, ₹7,000 (representing difference between sale price ₹1,43,000 and written down value ₹1,50,000).
- (vi) The company has made donations of ₹50,000 to charitable institutions and contributed ₹4 lakhs to an approved research association for research related to the company's business.
- (vii) Provision for Income-tax ₹8 lakhs and for surtax ₹60,000 made in the accounts.
- (viii) The net profit as per Profit and Loss Account is ₹16 lakhs. The company had suffered losses in the earlier years. The aggregate amount of such brought forward losses (after adjustments required to be made under Section 349) works out to ₹2.5 Lakhs.

You are required to calculate the net profit for the purpose of computing managerial remuneration.

**Solution:**

	₹.
Profit as per Profit and Loss Account	16,00,000
Add: Items not deductible:	
Managerial remuneration charged in the Profit and Loss Account	1,46,000
Provisions for doubtful debts	30,000
Provision for income-tax	<u>8,00,000</u>
	25,76,000
Short-term Capital Gain	1,30,000
Past Losses	<u>2,50,000</u>
Net Profit for calculation of managerial remuneration	<u>21,96,000</u>

**Illustration 4**

The following is the Profit and Loss Account of S.S. Ltd. for the year ended 31st March, 2011:

	₹.		₹.
To Salaries and wages	1,50,000	By Gross Profit	40,00,000
To Repairs to fixed assets	50,000	Profit on sale of machinery	
To General expenses	40,000	(cost ₹8,00,000 and written	
To Compensation for breach of contract	25,000	down value ₹4,00,000)	4,50,000
To Depreciation	2,40,000	By Subsidy from	
		the Government	1,00,000

To Loss on sale of investment	35,000	
To Expenditure on scientific research (cost of setting up a new laboratory)	2,50,000	
To Debenture interest	75,000	
To Interest on unsecured loans	15,000	
To Provision for Income-tax	16,00,000	
To Proposed dividends	10,00,000	
To Balance c/d	<u>10,70,000</u>	
	<u>45,50,000</u>	<u>45,50,000</u>

Calculate the overall managerial remuneration under Section 198.

**Solution:**

Net Profit as per Profit and Loss Account		₹	10,70,000
Add: Items not to be deducted under Sections 349 and 350			
Loss on sale of investment	₹	35,000	
Expenditure on scientific research being capital expenditure		2,50,000	
Provision for Income-tax		16,00,000	
Proposed dividends		<u>10,00,000</u>	<u>28,85,000</u>
			39,55,000
Less: Capital profit on sale of machinery not to be credited, i.e., Sale price ₹(4,00,000 + 4,50,000) – Cost price, = ₹(8,50,000 – 8,00,000)			<u>50,000</u>
Net Profit under Section 198 for managerial remuneration			<u>39,05,000</u>

∴ Maximum overall managerial remuneration @ 11% on ₹39,05,000  

$$= \frac{11}{100} \times 39,05,000 = ₹4,29,550$$

**Illustration 5**

(Calculation of maximum remuneration where there is a managing director)

From the following particulars of G.G. Ltd. calculate the maximum remuneration payable to the managing director and other part-time directors of the company:

Net Profit before provision for income-tax and managerial remuneration, but after depreciation and provision for repairs	₹	86,84,100
Depreciation provided in the books		32,00,000
Repairs for machinery provided for during the year		2,50,000
Actual expenditure incurred on repairs during the year		1,50,000

**Solution:**

Net Profit as stated	₹	86,84,100
Excess provision made for repairs of machinery i.e., ₹(2,50,000 – 1,50,000)		<u>1,00,000</u>
Net Profit for the purpose of calculating managerial remuneration		<u>87,84,100</u>

*Maximum Remuneration payable under Section 309*

Managing Directors @ 5% on ₹87,84,100	=	₹ 4,39,205
Part-time Directors @ 1% on ₹87,84,100	=	<u>87,841</u>
Total Managerial Remuneration	=	<u>5,27,046</u>

**Illustration 6**

Slow and Steady Ltd. has a manager who is entitled to get a monthly salary of ₹25,000 per month and in addition to receive a commission of 1% of the net profits of the company before such salary or commission. The following is the Profit and Loss Account of the company for the year ended 31<sup>st</sup> March, 2011:

(₹ in 000's)			
	₹		₹
To Staff Salaries	1,920	By Gross Profit b/d	9,650
To General Expenses	885	By Subsidy from the Government	600
To Depreciation	820	By Profit on sale on land	200
To Manager's Salary	300	By Profit on sale of machinery (cost ₹2,50,000 and written down value ₹1,80,000)	50
To Commission to the Manager (on account)	60		
To Provision for Bad Debts	75		
To Provision for income-tax	1,800		
To Proposed Dividends	1,600		
To Balance c/d	<u>3,040</u>		
	<u>10,500</u>		<u>10,500</u>

Calculate the maximum remuneration payable to the Manager.

**Solution:**

Profit as per Profit and Loss A/c	₹	30,40,000
Add: Items not to be deducted		
Salary and Commission paid to Manager ₹(3,00,000 + 60,000)	3,60,000	
Provision for Bad Debts	75,000	
Provision for Income-tax	18,00,000	
Proposed Dividends	<u>16,00,000</u>	<u>38,35,000</u>
		68,75,000
Less: Capital Profit on Sale of Land		2,00,000
Net Profit for the purpose of calculating managerial remuneration		<u>66,75,000</u>

Commission payable to Manager @ 1% on ₹66,75,000	₹66,750
Commission already paid to Manager	₹60,000
Commission still payable to Manager (subject to maximum - total remuneration payable)	₹6,750

Total remuneration already paid to manager  
 = Salary + commission = ₹(3,00,000 + 60,000) = ₹3,60,000

But the maximum remuneration payable to Manager under Section 387 at 5% on ₹66,75,000 = ₹3,33,750

∴ Excess remuneration drawn by manager  
 = ₹(3,60,000 - 3,33,750) = ₹26,250

It has to be assumed that the approval of the Central Government has been obtained for the excess payment. Otherwise the manager is liable to refund the excess payment.

### Illustration 7

(Calculation of managerial remuneration on net profits after charging such remuneration) Taking Illustration No. 6 above, suppose the manager is entitled to receive a commission of 1% of the net profits of the company after charging his salary and commission. Calculate the maximum remuneration payable to the manager.

### Solution:

	₹.
Net profit for the purpose of calculating managerial remuneration as ascertained above	= 66,75,000
Less: Salary paid to manager	= <u>3,00,000</u>
Net profit after charging salary but before charging commission=	63,75,000

Now, manager's commission will be as follows:

Let the profit after charging commission be ₹100

∴ Manager's commission = ₹1

∴ Profit before charging manager's commission = ₹(100 + 1) = ₹101.

∴ Manager's commission = ₹63,75,000 × 1/101 = ₹63,119

∴ Commission still payable to manager = ₹(63,119 - 60,000) = ₹3,119

In this case, the maximum remuneration payable to the manager will be as follows:

$$= ₹66,75,000 \times 5/105 = ₹3,17,857$$

But the total remuneration already paid = ₹(3,00,000 + 60,000)  
 = ₹3,60,000

Therefore, the excess remuneration drawn by the manager

$$= ₹(3,00,000 + 60,000) - ₹3,17,857$$

$$= ₹3,60,000 - ₹3,17,857 = ₹42,143$$

#### 14. APPROPRIATION OR DISPOSITION OF PROFITS

The question of appropriation or disposition of profits arises only when the company earns net profits, i.e., surplus or profits left after setting aside all charges against the income of the company including income-tax and surtax payable by the company in respect of the year's profits.

Section 205 of the Companies Act provides that -

(1) No dividend shall be declared or paid by a company for any financial year except out of the profits of the company for that year arrived at after providing for depreciation in accordance with the provisions of Sub-section (2) or out of the profits of the company for any previous financial year or years arrived at after providing for depreciation in accordance with those provisions and remaining undistributed or out of both or out of moneys provided by the Central Government or a State Government for the payment of dividend in pursuance of a guarantee given by that Government.

Provided that:

- (a) if the company has not provided for depreciation for any previous financial year or years which falls or fall after the commencement of the Companies (Amendment) Act, 1960, it shall, before declaring or paying dividend for any financial year provide for such depreciation out of the profits of that financial year or out of the profits of any other previous financial year or years;
- (b) if the company has incurred any loss in any previous financial year or years, which falls or fall after the commencement of the Companies (Amendment) Act, 1960, then, the amount of the loss or an amount which is equal to the amount provided for depreciation for that year or those years, whichever is less, shall be set off against the profits of the company for the year for which dividend is proposed to be declared or paid or against the profits of the company for any previous financial year or years arrived at in both cases after providing for depreciation in accordance with the provisions of Sub-section (2) or against both; and
- (c) the Central Government may, if it thinks necessary to do so in the public interest, allow any company to declare or pay dividend for any financial year out of the profits of the company for that year or any previous financial year or years without providing, for depreciation.

Provided further that it shall not be necessary for a company to provide for depreciation as aforesaid where dividend for any financial year is declared or paid out of the profits of any previous financial year or years which falls or fall before the commencement of the Companies (Amendment) Act, 1960.

- (2) For the purposes of Sub-section (1), depreciation shall be provided either:
  - (a) to the extent specified in Section 350; or
  - (b) in respect of each item of depreciable asset, for such an amount as is arrived at by dividing 95% of the original cost thereof to the company by the specified period in respect of such assets; or
  - (c) on any other basis approved by the Central Government which has the effect

of writing off by way of depreciation 95% of the original cost of the company of each such depreciable asset on the expiry of the specified period; or

- (d) as regards any other depreciable assets for which no rate of depreciation has been laid down by this Act or any rules made thereunder on such basis as may be approved by the Central Government by any general order published in the Official Gazette or by any special order if any particular case.

Provided that where depreciation is provided for in the manner laid down in clause (b) or clause (c) then, in the event of the depreciable asset being sold, discarded, demolished or destroyed, the written down value thereof at the end of the financial year in which the asset is sold, discarded, demolished, or destroyed, shall be written off in accordance with the proviso to Section 350.

(2A) Notwithstanding anything contained in Sub-section (1) no dividend shall be declared or paid by a company for any financial year out of the profits of the company for that year arrived at after providing for depreciation in accordance with the provisions of Sub-section (2), except after the transfer to the reserves of the company of such percentage of its profits for that year, not exceeding 10% as may be prescribed:

Provided that nothing in this sub-section shall be deemed to prohibit the voluntary transfer by a company of a higher percentage of its profits to the reserve in accordance with such rules as may be made by the Central Government in this behalf.

(2B) A company which fails to comply with the provisions of Section 80A shall not, so long as such failure continues, declare any dividend on its equity shares.

- (3) No dividend shall be payable except in cash:

Provided that nothing in this sub-section shall be deemed to prohibit the capitalisation of profits or reserves of a company for the purpose of issuing fully paid-up bonus shares or paying up any amount, for the time being unpaid, on any shares held by the members of the company.

(4) Nothing in this section shall be deemed to affect in any manner the operation of Section 208.

- (5) For the purpose of this section:

- (a) "Specified period" in respect of any depreciable asset shall mean the number of years at the end of which at least 95% of the original cost of that asset to the company will have been provided for by way of depreciation, if depreciation were to be calculated in accordance with the provisions of Section 350; and
- (b) any dividend payable in cash may be paid by cheque or warrant sent through the post directed to the registered address of the shareholder entitled to the payment of dividend, or in the case of joint shareholders to the registered address of that one of the joint shareholders which is first named on the register of members or to such person and to such address as the shareholders or the joint shareholders may in writing direct.

Generally, the Articles of the company contain the provisions relating to the manner in which the profit of the company have to be appropriated. The Board of directors is given the power to set aside such a portion of profits to reserves for meeting future contingencies or commitments as the Board of directors may think fit. But it assumes a difficult task for the Board of directors to discharge this responsibility due to the fact that various new legislations have come out in recent times restricting the disposition of profits of the company. As such, the decision as to the manner of disposition of the profits of the company should be guided more by the latest legal requirements than by the power given in the Articles.

## **15. TRANSFER OF PROFITS TO RESERVES**

The following are the legal requirements relating to transfer of profits to reserves.

Under Section 205(2A) of the Companies Act, 1956 before declaration and payment of dividend, a company is required to transfer such percentage of its profits for the year to reserves not exceeding 10% as may be prescribed.

The Central Government has prescribed such percentage by framing the Companies (Transfer of Profits to Reserves) Rules, 1975. Rule 2 of these rules provides that no dividend shall be declared or paid by a company for any financial year out of its profits for that year arrived at after providing for depreciation in accordance with the provisions of Sub-section (2) of Section 205 of the Act except after the transfer to reserves of the company of a percentage of its profits for that year as specified below:

- (i) Not less than 2-1/2% of the current profits, if the proposed dividend exceeds 10% but not 12-1/2% of the paid-up capital.
- (ii) Not less than 5% of the current profits, if the proposed dividend exceeds 12-1/2% but not 15% of the paid-up capital.
- (iii) Not less than 7-1/2% of the current profits, if the proposed dividend exceeds 15% but not 20% of the paid-up capital.
- (iv) Not less than 10% of the current profits, if the proposed dividend exceeds 20% of the paid-up capital.

It is evident from the above that where the proposed dividend is exactly 10% or less of the paid-up capital of the company, it is not obligatory on the part of the company to transfer a portion of its profits to the reserves. In such a case, it is entirely left to the discretion of the Board of directors of the company whether to transfer a portion of its profits to the reserves or not.

However, a company may voluntarily transfer more than 10% of the profits to the reserves for any financial year provided however that:

- (i) where a dividend is declared:
  - (a) a minimum distribution sufficient for the maintenance of dividends to shareholders at a rate equal to the average of the rates at which dividends declared by it over the three years immediately preceding the financial year; or

- (b) in a case where bonus shares have been issued in the financial year in which the dividend is declared or in the three years immediately preceding, the financial year, a minimum distribution sufficient for the maintenance of dividends to shareholders at an amount equal to the average amount (quantum) of dividend declared over the three years immediately preceding the financial year, is ensured:

Provided that in a case where the net profits after tax are lower by 20 per cent or more than the average net profits after tax of the two financial years immediately preceding, it shall not be necessary to ensure such minimum distribution.

- (ii) where no dividend is declared, the amount proposed to be transferred to its reserves from the current profits shall be lower than the average amount of the dividends to the shareholders declared by it over the three years immediately preceding the financial year.

## 16. DECLARATION OF DIVIDEND OUT OF RESERVES

Sub-section (3) of Section 205A has imposed certain restrictions on the utilisation of such reserves in declaring dividend. It provides that where, owing to inadequacy or absence of profits in any year, any company proposes to declare dividend out of the accumulated profits earned by the company in previous years and transferred by it to the reserves, such declaration of dividend shall not be made except in accordance with such rules as may be made by the Central Government in this behalf and where any such declaration is not in accordance with such rules, such declaration shall not be made except with the previous approval of the Central Government.

The Central Government has framed these rules known as Companies (Declaration of Dividend out of Reserves) Rules, 1975. Rule 2 of these rules provides that in the event of inadequacy or absence of profits in any year, dividend may be declared by a company for that year out of the accumulated profits earned by it in previous years and transferred by it to the reserves, subject to the conditions that:

- (i) the rate of the dividend shall not exceed the average of the rates at which dividend was declared by it in the five years immediately preceding that year or 10% of its paid-up capital, whichever is less;
- (ii) the total amount to be drawn from the accumulated profits earned in previous year(s) transferred to the reserves shall not exceed an amount equal to one-tenth of the sum of its paid-up capital and free reserves and the amount so drawn shall first be utilised to set-off the losses incurred in the financial year before any dividend in respect of preference or equity shares is declared; and
- (iii) the balance of reserves after such draw shall not fall below 15% of its paid-up share capital.

For the purpose of this rule, "profits earned by a company in previous years and transferred by it to the reserves" shall mean the total amount of net profits after the tax, transferred to reserves as at the beginning of the year for which the dividend is to be declared; and in computing the said amount, all items of capital reserves including reserves created by revaluation of assets shall be excluded.

**Illustration 8**

Due to inadequacy of profit during the year, the company proposes to declare dividend out of the general reserves. From the following particulars, you are to ascertain the amount that can be drawn applying the Companies (Declaration of Dividend out of Reserves) Rules, 1975:

	₹
(a) 17,500 9% preference shares of ₹100 each fully paid	17,50,000
(b) 7,00,000 equity shares of ₹10 each fully paid	70,00,000
(c) General reserves	21,00,000
(d) Capital reserves on revaluation of assets	3,50,000
(e) Share premium	3,50,000
(f) Profit and loss account-credit balance	63,000
(g) Net profit for the year	3,57,000

Average rate of dividend during the last five years: 15%.

**Solution:**

	₹
Profit and Loss Account (credit balance)	63,000
Profit for the year	<u>3,57,000</u>
	4,20,000
Less: Dividend on preference shares	<u>1,57,500</u>
Profit available for equity shareholders	<u>2,62,500</u>

In the instant case, profits being low, at the maximum 10% dividend can be declared to equity shareholders.

∴ 10% on ₹70,00,000	7,00,000
Short fall which is to be drawn from general reserve	<u>4,37,500</u>

Subject to the following conditions:

- (i) Maximum amount that can be drawn should not exceed 10% of paid-up capital and free reserve:

	₹
Paid-up capital:	
Preference shares	17,50,000
Equity shares	70,00,000
Free-reserves	<u>21,00,000</u>
	1,08,50,000
10% on ₹1,08,50,000	<u>10,85,000</u>

- (ii) After drawing the balance the reserves should not fall below 15% of the paid-up capital:

General reserve	₹ 21,00,000	
Less: Amount to be drawn	<u>4,37,500</u>	
	<u>16,62,500</u>	
15% of paid-up capital		
15% of (₹17,50,000 + 70,00,000)		
= 15% of ₹87,50,000		<u>13,12,500</u>

**Recommendations:**

The amount to be drawn from general reserves is much less than 10% of paid-up capital and free reserves.

Whereas, if ₹4,37,500 has been drawn from general reserves, the balance comes to ₹16,62,500, which is more than the minimum amount required i.e. ₹13,12,500. Hence, ₹4,37,500 can be safely drawn from general reserve for paying 10% dividend on equity shareholders.

**17. DIVIDEND**

The term "Dividend" refers to that part of the profits of a company which is distributed by the company among its shareholders by way of return on investments made by the shareholders in the shares, of the company. In other words, dividend is nothing but the distribution of divisible or distributable profits of a company among the holders of its shares. Dividend is paid by a company to its shareholders on the basis of number of shares held by them and the rights attaching to the various classes of shares.

Dividend can be paid by a company only out of its profits. As such, the question of payment of dividend does not arise in the absence of profits. An exception to this general principle is the case where the Central or a State Government has guaranteed the payment of dividend by the company. The quantum of dividend, however, depends, on a number of factors like profits earned by a company, terms of issue of various classes of shares, dividend policy of the company and the legal restrictions on the payment of dividend which may be in force from time to time.

The following additional factors are to be noted for the payment of dividend:

- (i) Dividend must be paid within 30 days of declaration.
- (ii) Dividend is payable only to the registered shareholders or on his order to his banker. However, where the company has issued share warrants according to Section 114, dividend is to be paid to the bearer of such warrant or to his banker.
- (iii) Articles of the company normally provide that dividends, may be paid in proportion to the amount paid-up on each share.

- (iv) No dividend is paid on calls in advance.
- (v) Where calls are in arrears, the company can make provision in the articles prohibiting the payment of dividend on shares on which full amount has not been paid. Otherwise dividend is payable only on the amount actually paid-up.

## **18. DIVIDEND ON PREFERENCE SHARES**

Preference shareholders enjoy a preferential right over the equity shareholders in the matter of dividend. They are entitled to receive dividend at the fixed rate before any dividend is paid to equity shareholders. But they can exercise their preferential right only when the company has distributable profits and the Board of directors recommends distribution of such profits.

If the company issues cumulative preference shares, the holders of such shares are entitled to receive all arrears of dividend in addition to the dividend for the current year before any dividend is paid to equity shareholders.

In case of inadequate profits or because of any other reason, the company may pay dividend on preference shares at a rate lower than the fixed rate. But in such a case, no dividend can be declared on equity shares.

Generally, after the payment of dividend at fixed rates on the preference shares, whatever balance of profits is left, the same is distributed to the equity shareholders. But there is an exception when participating preference shares are issued by the company. In such a case, the preference shareholders will also be entitled to share the balance of profits with the equity shareholders in the manner laid down by the terms of the issue of such shares. For example, the terms of the issue may provide that the preference shareholders will get, in addition to their preference dividend, 50% of the excess dividend over 20% paid to equity shareholders. If the equity shareholders get a dividend of 24% in any year, the preference shareholders will get an additional dividend of 2% (i.e., 50% of excess over 20% paid to equity shareholders).

## **19. DIVIDEND ON PARTLY PAID-UP SHARES**

Subject to the provisions contained in the Articles of the company, dividend can be paid either on the nominal amount or on the called up amount or on the paid-up amount of the partly paid-up shares. But, if the Articles of the company do not contain any such provision, Table A will be applicable which provides that dividend is payable on the paid-up value of the shares and the periods for which the various amounts have remained paid-up on shares have to be taken into consideration to calculate such dividend. Table A further provides that calls-in-advance are not to be treated as part of the paid-up capital and as such they cannot rank for payment of dividend. Interest can only be paid on such calls-in-advance at the prescribed rate of 6% p.a. But this rate can be increased by the Articles, if the company so desires. Table A also permits the Board of directors to apply the dividend payable to a shareholder towards the amount due from him on account of calls.

Section 93 of the Companies Act also provides that a company may, if so authorised by its articles, pay dividends in proportion to the amount paid-up on each share where a larger amount is paid-up on some shares than others. But if the

Articles of the company are silent, there is nothing to prevent a company from declaring the dividend on the nominal amount of shares even if the paid-up amount is less. Further, if and so long as nothing is paid upon any of the shares of the company, dividend may be declared and paid according to the nominal amounts of the shares.

## **20. DECLARATION OF DIVIDEND**

So far as the declaration of dividend is concerned, Clause 85 of Table A, Schedule I to the Companies Act provides that the company in general meeting, may declare dividend, but no dividend shall exceed the amount recommended by the Board. Although, the shareholders in general meeting have been given the power to declare dividend, the discretion as to whether to declare dividend or not has entirely been left with the Board of directors. If the directors, in their discretion, think that dividend should not be declared and as such do not recommend the declaration of the same, the shareholders in general meeting cannot declare dividend themselves. It is, therefore, the directors who, at their discretion, recommend declaration of dividend at a particular rate and the shareholders in general meeting have to be either approve or reject the same. The shareholders in general meeting can, of course, declare the dividend at a lower rate than that recommended by the Board, but, in no case, can they increase the rate of dividend.

Right of the shareholders to claim dividend can only arise when a dividend is declared by the company at its annual general meeting. A shareholder, whether preference or equity, has got no right to claim that the company should distribute its profits as dividend. But a dividend, when declared by the company becomes a debt of the company to its shareholders and as such a shareholder can sue the company for recovering the same after the expiry of the specified period prescribed by Section 207.

## **21. TAX ON DISTRIBUTED PROFIT**

The Finance Act, 1997 has introduced, with effect from 1st June, 1997, a scheme for taxation on dividend on companies declaring, distributing or paying dividends. This tax designated as tax on distributed profit which is payable by the companies. The salient features of tax on distributed profit are as follows:

Only domestic company is liable to pay the tax.

Tax on distributed profit is paid in addition to the income tax chargeable in respect of total income.

It is chargeable on any amount declared, distributed or paid by such company by way of dividend whether interim or otherwise.

The present rate of tax is fifteen per cent\*.

It applicable only if such dividend is declared, distributed or paid.

The dividend chargeable to tax on distributed profit may be out of the current profits or accumulated profits.

Tax on distributed profit shall be payable even if no income tax is payable by the domestic company on its total income.

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\* The rate is subject to change by the Finance Act and may also subject to surcharge, if any.

Tax on distributed profit is payable to the credit of the Central Government within 14 days from the date of - (a) declaration, (b) distribution, or (c) payment of any dividend whichever is earliest.

This tax paid on distributed profit will be treated as the final payment of tax on the dividends and no further credit, therefore, shall be claimed by the company or any person in respect of the tax so paid.

According to the generally accepted accounting principles the provision for dividend is recognised in the final accounts of the year to which the dividend relates. Hence, the tax on dividend should also be reflected in the accounts of the same financial year. As a matter of convention and to improve readability, the information in the profit and loss account is generally shown in two parts, the first part, being the profit and loss account proper, contains the information which is required to arrive at the figure of the current year's profit, often referred to as above the line', while the second part, being the appropriation section is termed as below the line'. Since dividends are disclosed below the line, now a question arises with regard to the disclosure of tax on distributed profit whether it should be disclosed below the line' in the profit and loss appropriation account along with dividends or should be disclosed along with the normal income tax provision for the year above the line' in the profit and loss account. It is stated that the liability in respect of tax on distributed profit arises only if the profits are distributed as dividends, whereas normal income tax liability arises on the earnings of the taxable profits. Since the liability in respect of tax on distributed profit is related to the distribution of profits as dividends which are disclosed below the line' i.e. in profit and loss appropriation account, it is quite appropriate that the liability in respect of tax on distributed profit should also be disclosed below the line' i.e. in profit and loss appropriation account as a separate item. In brief, tax on distributed profit liability should be disclosed in the profit and loss appropriation account as under:

To Proposed Dividend	XXX
To Tax on Distributed Profit	<u>XXX</u>

In the Balance Sheet, Tax on Distributed Profit should be shown separately under the head Provisions'.

## 22. PAYMENT OF DIVIDEND

According to Section 205A of the Companies Act, all dividends remaining unpaid/unclaimed within 30 days of declaration of dividend whether dividend warrants have been posted or not, must be deposited in the unpaid dividend account. For facilitating the payment of dividend a separate bank account is opened. After the lapse of seven years the amount in the unpaid dividend account is transferred to a fund established under Section 205C, i.e., Investor Education and Protection Fund. The following journal entries facilitate this procedure:

Profit and Loss Appropriation A/c	Dr.	(on recommending payment of
OR		dividend to shareholders)
Dividend Equalisation Account	Dr.	
OR		

General Reserve Account To Proposed Dividend Account To Tax on Distributed Profit	Dr.	
Proposed Dividend Account To Dividend Payable Account	Dr.	(on declaration of dividend at the general meeting)
Dividend (Name of the Bank) Bank A/c To Bank Account	Dr.	(on transferring the amount of dividend to a separate account in a bank facilitating payment of dividend)
Dividend Payable Account To Dividend (Name of the Bank) Bank Account	Dr.	(on payment of dividend to the shareholders)
Dividend Payable Account To Unpaid Dividend Account	Dr.	(on transferring the unpaid/unclaimed dividend to a liability account)
Unpaid Dividend (Name of the Bank) Bank Account To Dividend (Name of the Bank) Bank Account	Dr.	(on transferring the amount lying in Dividend Bank Account to a separate Bank Account to comply with the provisions of Section 205A of the Companies Act, 1956)
Unpaid Dividend Account To Unpaid Dividend Bank Account	Dr.	(on paying dividends out of unpaid dividend Bank Account after expiry of 30 days)
Unpaid Dividend Account To Investor Education and Protection Fund	Dr.	[on transferring the balance in Unpaid Dividend Account to the credit of Investor Education and Protection Fund Account after expiry of 7 years (Section 205C)]
Investor Education and Protection Fund Account To Unpaid Dividend (Name of the Bank) Bank Account	Dr.	(on actual payment of money to the credit of Investor Education and Protection Fund)
Tax on Distributed Profit Account To Bank	Dr.	(on payment of dividend tax)

### 23. INTERIM DIVIDEND

Interim dividend means a dividend paid to the shareholders of a company in anticipation of profits of a period before the accounts of the company for that period have been prepared. In other words, an interim dividend is a dividend declared at any time between the two annual general meeting where the final dividend is declared. It can be paid if authorised by the Articles. Clause 86 of Table A empowers the Board of directors to pay interim dividend from time to time as it appears to be justified by the profits of the company.

Since the profits of the company cannot be known exactly till the accounts are closed, the directors have to be extremely careful. If an interim dividend is paid and it is found subsequently that the company's profits are inadequate to cover the amount paid as interim-dividend, it will amount to payment of dividend out of capital which is forbidden by law. As such, the directors generally get the accounts prepared upto a certain date and then declare dividend on a very conservative basis. Interim dividend thus paid, is undoubtedly an appropriation of profits and as such, it has to be shown on the debit side of the Profit and Loss Appropriation Account.

After the introduction of Section 205(2A) by the Companies (Amendment) Act, 1974, a company must be even more careful to pay interim dividend since this subsection requires that no dividend shall be declared or paid by a company unless the profits of the company are arrived at after providing for depreciation for the full year and also after transferring the profits to the reserves at the specified rate. The Companies (Amendment) Act, 1999 states that 'dividend' includes any 'interim dividend'. It means interim dividend is also treated at par with final dividend and the procedures of payment of final dividend may be followed in the case of interim dividend also.

#### **24. PAYMENT OF DIVIDEND OUT OF CAPITAL PROFITS**

A company, subject of the fulfilment of certain conditions, can pay dividend out of capital profits. These conditions, as per various judicial cases, are:

- (i) The Articles of the company did not forbid such distribution.
- (ii) Such profits were actually realised in cash.
- (iii) Surplus did remain after a fair evaluation of all the assets of the company.

Capital profits available for dividends should not be included in Capital Reserve since by definition Capital Reserve means a reserve which can not be used for paying a dividend.

However, certain amounts which are required to be transferred to Capital Reserve (e.g. profit on re-issue of forfeited shares) cannot be used for paying dividend. Securities premium cannot be of course be so used. The following items of capital profits are not available for dividend:

- (i) Profit on re-issue of forfeited shares;
- (ii) Securities premium account;
- (iii) Capital redemption reserve account;
- (iv) Profit on sale of fixed assets (to the extent the sale proceeds exceed the original cost of the fixed assets sold);
- (v) Profits prior to incorporation etc.
- (vi) Profits on redemption of debentures.

However, capital profits can be utilised by the company in the following ways:

- (a) Issuing fully paid-up bonus shares to the shareholders of the company;
- (b) Writing off capital losses of the company, such as, preliminary expenses discount on issue of shares and debentures, underwriting commission, etc.
- (c) Writing off loss on revaluation of assets of the company; and

- (d) Providing for premium payable on redemption of preference shares or debentures.

## **25. PAYMENT OF DIVIDEND OUT OF CURRENT PROFITS WITHOUT MAKING GOOD PAST LOSSES**

A company is under no legal obligation to make good a debit balance in its Profit and Loss Account resulting from past losses before distributing current profits. But so much of the loss sustained by a company in the past financial year and years falling after 28th December, 1960 as is attributable to the amount of provision made for depreciation, must be set off against the current profits of the company before a dividend is declared. The position in respect of set off of past losses for determining divisible profits may be summarised as under:

- (1) In respect of previous years ending before 28th December, 1960, arrears of depreciation need not be taken into account.
- (2) In respect of previous years ending after 28th December, 1960:
  - (a) All arrears of depreciation not provided for must be set off against the profits of the current year;
  - (b) the losses of such years must be set off to the extent to which they consist of depreciation provided in the books.

But from the view point of sound commercial policy, however, it is desirable to apply current profits in making good lost capital.

## **26. CAPITALISATION OF PROFITS AND RESERVES OR ISSUE OF BONUS SHARES**

When a company accumulates huge reserves out of its profits which is much in excess of the needs of the company, the excess amount can be distributed by way of bonus shares among the existing shareholders of the company. The effect of an issue of bonus shares are - (i) a reduction in the amount of accumulated profits and reserves, and (ii) a corresponding increase in the paid-up share capital of the company. Thus, the accumulated profits and reserves of the company are converted into its share capital which is permanently used in the business. That is why this process is also known as "Capitalisation of Profits and Reserves". Capitalisation of accumulated profits and reserves of a company is possible only if the Articles of the company contain such provision. Bonus shares are issued by the company free of charge to its existing shareholders on a pro-rata basis. The basic characteristics of bonus shares are the following:

- (1) Bonus shares are issued to the existing shareholders.
- (2) Bonus shares are always fully paid up.
- (3) Right to renunciation is not available in respect of bonus shares.

Bonus shares can be issued out of the following:

- (i) Balance in the Profit and Loss Account;
- (ii) General Reserves or other Reserves created out of the profits;
- (iii) Realised capital profits and reserves;
- (iv) Securities Premium Account;
- (v) Capital Redemption Reserve Account (created out of profits for the redemption of redeemable preference shares).

While preparing the Balance Sheet of the company after the issue of bonus shares, the number of shares issued as bonus shares and the source of the issue must be disclosed in the Balance Sheet.

*Advantages of the Issue of Bonus Shares*

*(a) From the view point of the company—*

- (1) As the bonus is not paid in cash, the liquid resources of the company are not disturbed.
- (2) A more realistic picture of the company's capital structure is displayed in the Balance Sheet.
- (3) This is the cheapest method of increasing capital which is necessary in case of expansion of business. (However, in effect it does not increase the total resources at the disposal of the company).
- (4) Abnormally high rate of dividend can be reduced by increasing capital.
- (5) As the profit is permanently ploughed back into the company, its credit worthiness increases.

*(b) From the view point of the shareholders*

- (1) If the shareholder requires cash, they can easily convert the bonus shares into cash.
- (2) These bonus shares become a permanent source of income to the shareholders, if the rate of dividend is maintained or not reduced proportionately.
- (3) Although the rate of dividend falls, the total amount of dividend may increase as the shareholders get dividend on a larger number of shares.

The following facts should be considered while declaring bonus shares:

- (i) The bonus issue shall be made out of free reserves built out of the genuine profits or share premium collected in cash only.
- (ii) Reserves created by revaluation of fixed assets are not capitalised.
- (iii) The declaration of bonus issue, in lieu of dividend, is not made.
- (iv) The bonus issue is not made unless the partly-paid shares, if any existing, are made fully paid-up.
- (v) The Company:
  - (a) has not defaulted in payment of interest or principal in respect of fixed deposits and interest on existing debentures or principal on redemption thereof; and
  - (b) has sufficient reason to believe that it has not defaulted in respect of the payment of statutory dues of the employees such as contribution to provident fund, gratuity, bonus etc.

**Accounting Entries on Issue of Bonus Shares**

(a) When unissued shares of the company are issued to its members as fully paid-up bonus shares -

(1) On the sanction and declaration of issue of bonus shares -

Profit and Loss Appropriation A/c	Dr.	(with the amount of bonus
Or Respective Reserve A/c	Dr.	sanctioned)
To Bonus to Shareholders A/c		

(2) On Issue of Shares to Shareholders -

Bonus to Shareholders A/c	Dr.	(with the amount of bonus)
To Share Capital A/c		(with the nominal value of shares issued)

(b) When partly paid shares are made fully paid:

(1) On the sanction and declaration of issue of bonus shares:

Profit and Loss Appropriation A/c	Dr.
Or Respective Reserve A/c	Dr.
To Bonus to Shareholders A/c	

(2) For making calls:

Share Call A/c	Dr.
To Share Capital A/c	

(3) On applying the bonus towards calls on shares

Bonus to Shareholders A/c	Dr.
To Share Call A/c	

**Illustration 9**

Below is the Balance Sheet of the Excellent Ltd. as at 31st March, 2011.

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised	15,00,000	Plant and Machinery	6,00,000
Issued and Subscribed:		Furniture and Fittings	75,000
2,000 8% Redeemable		Investments	1,00,000
Preference Shares of			
₹100 each, fully		<i>Current Assets, Loans</i>	
paid-up	2,00,000	<i>and Advances:</i>	
50,000 Equity Shares		(a) Current Assets	
of ₹10 each fully		Stock	1,70,000
paid-up	5,00,000	Debtors	65,000
<i>Reserves and Surplus:</i>		Cash at Bank	80,000
Capital Reserve	25,000	(b) Loans and Advances:	Nil
Securities Premium	30,000		

General reserve	1,60,000
Profit and Loss Account	1,38,000

*Current Liabilities and Provisions:*

(A) Current liabilities:		
Sundry Creditors	37,000	
(B) Provisions	<u>        -</u>	
	<u>10,90,000</u>	<u>10,90,000</u>

On this date the company decided to redeem its preference shares at a premium of 5%. For this purpose, investments were sold for ₹1,10,000 and 10,000 equity shares of ₹10 each were issued at a premium of ₹1 each.

After redemption of preference shares, the company issued one bonus share of ₹10 each for every five equity shares held.

Pass journal entries to record the above-mentioned transactions and prepare the balance sheet as it would appear thereafter.

**Solution:**

**Journal Entries**

		<i>Dr.</i>	<i>Cr.</i>
		<u>₹</u>	<u>₹</u>
2011			
Mar. 31	Bank	Dr. 1,10,000	
	To Investment A/c		1,00,000
	To Profit and Loss A/c		10,000
	(Sale proceeds of investment and transfer of profits on sale to profit and loss account)		
—	Bank	Dr. 1,10,000	
	To Equity Share Capital A/c		1,00,000
	To Securities Premium A/c		10,000
	(Allotment of 10,000 equity shares of ₹10 each issued at a premium of ₹1 per share as per Board's resolution dated...)		
—	Profit and Loss Appropriation A/c	Dr. 1,00,000	
	To Capital Redemption Reserve A/c		1,00,000
	(Transfer of profits to Capital Redemption Reserve for the amount of nominal value of shares redeemed not covered by fresh issue)		

		₹	₹
2011			
Mar. 31	8% Redeemable Preference Share Capital A/c	Dr. 2,00,000	
	Premium on Redemption of Preference Shares A/c	Dr. 10,000	
	To Preference Shareholders A/c		2,10,000
	(Amount due on redemption)		
—	Securities Premium A/c	Dr. 10,000	
	To Premium on Redemption of Preference Shares A/c		10,000
	(Writing off Premium on Redemption of Preference Shares against Securities Premium Account)		
—	Preference Shareholders A/c	Dr. 2,10,000	
	To Bank		2,10,000
	(Payment of the amount due on redemption)		
—	Capital Redemption Reserve A/c	Dr. 1,00,000	
	Securities Premium A/c	Dr. 20,000	
	To Bonus to Shareholders A/c		1,20,000
	(Declaration of bonus of ₹1,20,000 in the form of shares as per shareholders resolution dated...)		
—	Bonus to Shareholders A/c	Dr. 1,20,000	
	To Equity Share Capital A/c		1,20,000
	(Issue of 12,000 equity shares of ₹10 each fully paid-up in the ratio of 1:5, i.e., one fully paid-up share of every five shares held)		

**Balance Sheet of Excellent Ltd. as on 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital	<u>15,00,000</u>	Plant and Machinery	6,00,000
Issued and Subscribed:		Furniture and Fittings	75,000
72,000 Equity Shares of ₹10 each, fully paid-up	7,20,000	Investments	Nil
(Of the above shares 12,000 shares are allotted as fully paid-up by way of bonus)		<i>Current Assets, Loans and Advances:</i>	

shares out of Capital Redemption Reserve and Securities Premium)		(a) Current Assets:	
		Stock	1,70,000
		Debtors	65,000
		Cash at Bank	90,000
<i>Reserves and Surplus:</i>			
Capital Reserve	25,000		
Securities Premium Account	10,000		
General Reserve	1,60,000		
Profit and Loss Account	48,000		
<i>Current Liabilities and Provisions:</i>			
(A) Current Liabilities:			
Sundry Creditors	37,000		
(B) Provisions			
	<u>10,00,000</u>		<u>10,00,000</u>

## 27. PAYMENT OF INTEREST OUT OF CAPITAL

As a general rule, dividend cannot be paid except out of the profits of the company, that is to say, dividend cannot be paid out of the capital of the company. But there is an exception to this general rule where capital has been raised by a company to defray the expenses on the construction of any works or building or providing a plant which cannot be expected to earn profits for a considerable period of time. In such a case the company can pay interest on the capital during the period of construction even though there is no profit.

Section 208 of the Companies Act deals with the payment of interest out of capital. This section empowers the company to pay interest on its paid up share capital subject to the following conditions:

- The payment is authorised by the Articles of the company or by a special resolution.
- Prior sanction of the Central Government has been obtained.
- The rate of interest does not exceed 4% per annum or such other rate as may be prescribed by the Central Government.
- The payment of interest is only for such a period as may be determined by the Central Government. But the period cannot extend beyond the close of the half year next after the half year in which the works, buildings, etc., have been completed or the plant has been provided. For example, if construction is completed on 11th June, 2010, interest cannot be paid for a period beyond 31st March, 2011.

The important point to be noted here is that the word "interest" instead of "dividend" has been purposely used to distinguish the amount paid out of capital from the amount paid out of profits of the company.

Section 208 further requires that such a payment of interest during the period of

construction should be charged to capital and as such the amount of interest, so paid, should be added to the cost of the respective asset as part of the cost of construction.

### Illustration 10

The following balances appeared in the books of the Moon-Light Co. Ltd. as on 31st March, 2011:

	(₹ in 000's)	
	Dr.	Cr.
	₹	₹
Issued, Subscribed and paid-up Capital:		
60,00,000 Equity Shares of ₹100 each		6,00,000
General Reserve		2,50,000
Unclaimed Dividend		6,526
Trade Creditors		36,858
Buildings at cost	1,50,000	
Purchases	5,00,903	
Sales		10,83,947
Manufacturing Expenses	3,59,000	
Establishment Charges	26,814	
General Charges	31,078	
Machinery at Cost	2,00,000	
Motor Vehicle at Cost	30,000	
Furniture at Cost	5,000	
Opening Stock	1,72,058	
Book Debts	2,23,380	
Investments	2,88,950	
Depreciation Reserve		71,000
Advance Payment of Income-tax	50,000	
Cash Balance	72,240	
Directors' Fees	1,800	
Interest on Investment		8,544
Profit and Loss Account		
1st April, 2010		16,848
Staff Provident Fund		37,500
	<u>21,11,223</u>	<u>21,11,223</u>

From these balances and the following information, prepare the Company's Balance Sheet as on 31st March, 2011 and its Profit and Loss Account for the year ended on that date:

- The stocks on 31st March, 2011 were valued at ₹1,48,680 thousand.
- Provided ₹10,000 thousand for depreciation on fixed assets, ₹1,800 thousand for Managing Director's remuneration and ₹6,200 thousand for the company's contribution to the Staff Provident Fund.

- (c) Interest accrued on investment amounted to ₹2,750 thousand.
- (d) A provision of ₹50,000 thousand for taxes in respect of the profit for 2010-11 considered necessary.
- (e) The directors propose a final dividend @ 8% after transfer to General Reserve ₹30,000 thousand.
- (f) A claim of ₹2,500 thousand for workmen's compensation is being disputed by the company.
- (g) The market value of investments as on 31.3.2011 amounts to ₹3,02,500 thousand.

**Solution:**

**Profit and Loss Account of the Moonlight Co. Ltd.  
for the Year Ended 31st March, 2011**

(₹ in 000's)

Dr.	Cr.
	₹
To Opening Stock	1,72,058
To Purchases	5,00,903
To Manufacturing Expenses	3,59,000
To Establishment Charges	26,814
To General Charges	31,078
To Directors' Fees	1,800
To Depreciation on Fixed Assets	10,000
To Managing Director's Remuneration	1,800
To Contribution to Staff Provident Fund	6,200
To Provision for Taxation	50,000
To Profit for the year c/d	<u>84,268</u>
	<u>12,43,921</u>
To General Reserve (transfer)	30,000
To Proposed Dividend	48,000
To Tax on Distributed Profit*	7,200
To Balance c/d	<u>15,916</u>
	<u>1,01,116</u>
	₹
By Sales	10,83,947
By Closing Stock	1,48,680
By Interest on Investments	8,544
Add: Accrued Interest	<u>2,750</u> 11,294
	<u>12,43,921</u>
By Balance as per last year	16,848
By Profit for the year b/d	84,268
	<u>1,01,116</u>

\* TDP has been calculated @15% on the proposed dividend. It may also be subject to surcharge, if any.

**Balance Sheet of the Moonlight Co. Ltd. as 31st March, 2011  
(Horizontal Form)**

<i>Liabilities</i>	<i>₹</i>	<i>Assets</i>	<i>₹</i>
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital	-	Building at cost	1,50,000
Issued, Subscribed and Paid-up Capital		Machinery at cost	2,00,000
60,00,000 Equity Shares of ₹. 100 each	6,00,000	Motor vehicle at cost	30,000
		Furniture at cost	<u>5,000</u>
<i>Reserves and Surplus:</i>			3,85,000
General Reserve	2,50,000	Less:	
Added during the year	<u>30,000</u>	Depreciation upto date (71,000 + 10,000)	<u>81,000</u>
	2,80,000		3,04,000
Profit and Loss Account	15,916	Investment (market value ₹ 3,02,500)	2,88,950
<i>Secured Loan</i>		<i>Current Assets,</i>	
<i>Unsecured Loan</i>		<i>Loans and Advances:</i>	
<i>Current Liabilities and Provisions:</i>		A. Current Assets	
A. Current Liabilities:		Interest Accrued on Investments	2,750
Trade Creditors	36,858	Stock in trade (at cost or market value whichever is less)	1,48,680
Unclaimed Dividend	6,526	Books Debts	2,23,380
Managing Director's Remuneration	1,800	Cash in hand	72,240
B. Provision:		B. Loans and Advances:	
Provision for Taxation	50,000	Advance Payment of Tax	50,000
Proposed dividend	48,000	Miscellaneous Expenditure	—
Tax on Distributed Profit	7,200		
Staff Provident Fund	37,500		
Added during the year	<u>6,200</u>		
	43,700		
	<u>10,90,000</u>		<u>10,90,000</u>

**Note:** There is a contingent liability for ₹2,500 in respect of a claim for workmen's compensation which is disputed by the company.

Vertical Form\*

**Balance Sheet of the Moonlight Co. Ltd. as at 31st March, 2011***(₹ in 000s)*

	Schedule No.	Figure as at the end of current financial year	
		₹	₹
<b>I. Sources of Funds</b>			
1. Shareholders' funds:			
(a) Capital	...	6,00,000	
(b) Reserves and Surplus	...	<u>2,95,916</u>	<u>8,95,916</u>
2. Loan Funds:			
(a) Secured Loans	...	—	—
(b) Unsecured Loans	...	—	—
			<u>8,95,916</u>
<b>II. Application of Funds</b>			
1. Fixed assets:			
(a) Gross blocks	...	3,85,000	
(b) Less depreciation	...	<u>81,000</u>	
(c) Net blocks	...		3,04,000
(d) Capital work-in-progress	...		
2. Investments	...		2,88,950
3. Current Assets, Loans and Advances			
(a) Inventories	...	1,48,680	
(b) Sundry Debtors	...	2,23,380	
(c) Cash and bank balances	...	72,240	
(d) Other current assets	...	—	
(e) Loans and advances	...	<u>52,750</u>	4,97,050
Less: Current Liabilities and Provisions			
(a) Liabilities	...	45,184	
(b) Provisions	...	<u>1,48,900</u>	<u>1,94,084</u>
Net current assets			3,02,966
4. (a) Miscellaneous expenditure (to the extent not written of or adjusted)	...		—
(b) Profit and loss account	...		—
Total			<u>8,95,916</u>

**Note:** There is a contingent liability for ₹2,500 in respect of a claim for workmen's compensation which is disputed by the company.

\* The balance sheet should be given only in one form – the horizontal form or the vertical form.

**Illustration 11**

Mutual Engineers Ltd. have authorised capital of ₹50 lakhs, divided into 5,00,000 equity shares of ₹10 each. Their books show the following balances as on 31.3.2011:

	₹		₹
Stock 1.4.2010	6,65,000	Bank current account	20,000
Discount and rebates	30,000	Cash in hand	8,000
Carriage inwards	57,500	Debenture interest	
Patterns	3,75,000	(for ½ year to 30.9.2010)	20,000
Rates, taxes and insurance	55,000	Interest banks (Dr.)	91,000
Furniture and fixtures	1,50,000	Preliminary expenses	10,000
Materials purchased	12,32,500	Calls-in-arrears	10,000
Wages	13,05,000	Equity share capital	
Coal and coke	63,000	(2,00,000 share of	
Freehold land	12,50,000	₹10 each)	20,00,000
Plant and machinery	7,50,000	8% Debentures	5,00,000
Engineering tools	1,50,000	Bank overdraft	7,57,000
Goodwill	3,75,000	Sundry creditors (for goods)	2,40,500
Sundry debtors	2,66,000	Sales	36,17,000
Bills receivable	1,34,500	Rents (Cr.)	30,000
Advertisement	15,000	Transfer fees	6,500
Commission and brokerage	67,500	Profit and Loss A/c (Cr.)	67,000
Business expenses	56,000		
Repairs	46,500		
Bad debts	25,500		

The stock (valued at cost or market value whichever is lower) as on 31.3.2011 was ₹7,08,000. Outstanding liability for wages ₹25,000 and business expenses ₹25,000.

Dividend declared @ 8% on paid-up capital.

To charge depreciation: Plant and Machinery @ 15% Engineering Tools @ 20%, Patterns @ 10% and furniture and fixture @ 10%. Provide 2% on debtors as doubtful debts after writing off ₹21,500 as bad debts. Write off preliminary expenses ₹5,000 and create Debenture Redemption Reserve ₹50,000. Provide ₹1,30,000 for income-tax.

Prepare Profit and Loss Account for the year ended 31.3.2011 and Balance Sheet, as on that date, in accordance with the Companies Act, 1956, giving as much information as necessary. Ignore previous year's figures.

**Solution:**

**Profit and Loss Account of Mutual Engineers Ltd.  
for the year ended 31st March, 2011**

<i>Dr.</i>			<i>Cr.</i>
	₹		₹
To Opening Stock	6,65,000	By Sales	36,17,000
To Materials purchased	12,32,500	By Closing Stock	7,08,000
To Carriage inwards	57,500	By Rent	30,000
To Wages	13,30,000	By Transfer Fees	6,500
To Coal and Coke	63,000		
To Discount and Rebates	30,000		
To Rates, Taxes and Insurance	55,000		
To Advertisements	15,000		
To Commission and Brokerage	67,500		
To Business expenses	81,000		
To Repairs	46,500		
To Bad Debts	47,000		
To Debenture Interest	40,000		
To Interest-Banks	91,000		
To Preliminary Expenses	5,000		
To Depreciation on Plant and Machinery	1,12,500		
Engineering			
Tools	30,000		
Patterns	37,500		
Furniture and Fixtures	<u>15,000</u>		
	1,95,000		
To Provision for Doubtful Debts	4,890		
To Provision for Income-tax	1,30,000		
To Profit for the year c/d	<u>2,05,610</u>		
	<u>43,61,500</u>		<u>43,61,500</u>
To Debenture Redemption Reserve-transfer	50,000	By Balance as per last year	67,000
To Proposed Dividend	1,59,200	By Profit for the year b/d	2,05,610
To Tax on Distributed Profit @ 15%	23,880		
To Balance c/d	<u>39,530</u>		
	<u>2,72,610</u>		<u>2,72,610</u>

Horizontal Form\*

**Balance Sheet of Mutual Engineers Ltd. as at 31st March, 2011**

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
			₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital		Goodwill	3,65,000
5,00,000 Equity Shares		Freehold Land at cost	12,50,000
of ₹10 each	<u>50,00,000</u>	Plant and	
Issued and Subscribed		Machinery**	7,50,000
Capital		Less: Depreciation	<u>1,12,500</u> 6,37,500
2,00,000 Equity Shares		Furniture and	
of ₹10 each, fully		Fixtures**	1,50,000
called up- 20,00,000		Less: Depreciation	<u>15,000</u> 1,35,000
Less: Calls-in-arrear <u>10,000</u>	19,90,000	Patterns**	3,75,000
<i>Reserves and Surplus:</i>		Less: Depreciation	<u>37,500</u> 3,37,500
Debenture Redemption		Engineering	
Reserve	50,000	Tools**	1,50,000
Profit and Loss Account	39,530	Less: Depreciation	<u>30,000</u> 1,20,000
<i>Secured Loan:</i>		<i>Investments:</i>	-
8% Debentures (repayable		<i>Current Assets, Loans</i>	
after 10 years)	5,00,000	<i>and Advances:</i>	
Interest due and payable	20,000	A. Current Assets:	
Bank overdraft***	7,57,000	Stock-in-trade	
Unsecured Loans	-	(Valued at cost or	
<i>Current Liabilities and</i>		market value which-	
<i>Provisions:</i>		ever is lower)	7,08,000
A. Current Liabilities:		Sundry Debtors	2,44,500
Sundry Creditors		Less: Provision	
(for goods)	2,40,500	for Doubtful Debts	<u>4,890</u> 2,39,610
Outstanding Wages	25,000	Cash in hand	8,000
Outstanding Expenses	25,000	Bank Balance in Current A/c	20,000
B. Provisions:		B. Loans and Advances:	
Provision for income-tax	1,30,000	Bills Receivable	1,34,500
Proposed Dividend	1,59,200	<i>Miscellaneous expenditure:</i>	
Tax on Distributed Profit	23,880	Preliminary Expenses	<u>5,000</u>
	<u>39,60,110</u>		<u>39,60,110</u>

**Note:** As the rate of dividend is 8%, transfer to statutory reserve as per Section 205(2A) is not essential.

\* Either Horizontal Form or Vertical Form is required.

\*\* Strictly these assets are to be shown at cost less total depreciation provided till date.

\*\*\* Treated as Second Loans.

Vertical Form\*

**Balance Sheet of Mutual Engineers Ltd.  
as at 31st March, 2011**

	Schedule No.	Figure as at the end of current financial year		
		₹	₹	₹
<b>I. Sources of Funds</b>				
1. Shareholders' funds:				
(a) Capital	1	19,90,000		
(b) Reserves and Surplus	2	<u>89,530</u>	20,79,530	
2. Loan funds:				
(a) Secured loans	3	12,77,000		
(b) Unsecured loans		<u>—</u>	<u>12,77,000</u>	<u>33,56,530</u>
<b>II. Application of Funds</b>				
1. Fixed assets:				
(a) Gross blocks	4	30,40,000		
(b) Less Depreciation		<u>1,95,000</u>		
(c) Net blocks			28,45,000	
(d) Capital work-in-progress			<u>—</u>	28,45,000
2. Investments				<u>—</u>
3. <i>Current Assets, Loans and Advances:</i>				
(a) Inventories valued at cost or market value whichever is lower		7,08,000		
(b) Sundry debtors		2,39,610		
(c) Cash and bank balances		28,000		
(d) Other current assets		<u>—</u>		
(e) Loans and advances		<u>1,34,500</u>	11,10,110	
Less: Current Liabilities and Provisions:				
(a) Liabilities	5	2,90,500		
(b) Provisions		<u>3,13,080</u>	<u>6,03,580</u>	
Net current assets				5,06,530
4. (a) Miscellaneous expenditure (to the extent not written of or adjusted) Preliminary expenses				5,000
(b) Profit and loss account				<u>—</u>
Total				<u>33,56,530</u>

\* Either Horizontal Form or Vertical Form is required.

**Schedules****1. Shareholders' Funds:**

Capital	₹
Authorised 5,00,000 equity shares of ₹10 each	<u>50,00,000</u>
Subscribed and paid-up	
2,00,000 equity shares of ₹10 each	20,00,000
Less: Calls in arrears	<u>10,000</u>
Amount as per Balance Sheet	<u>19,90,000</u>

**2. Reserves and Surplus**

Debenture Redemption Reserve	50,000
Surplus as per Profit and Loss A/c	<u>39,530</u>
Amount as per Balance Sheet	<u>89,530</u>

**3. Loan Funds:**

Secured loans	
8% Debentures	5,00,000
Interest accrued and due	20,000
Bank overdraft	<u>7,57,000</u>
Amount as per Balance Sheet	<u>12,77,000</u>

**4. Fixed Assets**

<i>Particulars</i>	<i>Value given</i>	<i>Depreciation charged</i>	<i>Written down value on 31.3.2011</i>
Goodwill	3,65,000	—	3,65,000
Land	12,50,000	—	12,50,000
Plant and Machinery	7,50,000	1,12,500	6,37,500
Furniture and Fixtures	1,50,000	15,000	1,35,000
Patterns	3,75,000	37,500	3,37,500
Engineering tools	<u>1,50,000</u>	<u>30,000</u>	<u>1,20,000</u>
	<u>30,40,000</u>	<u>1,95,000</u>	<u>28,45,000</u>

**5. Current Liabilities and Provisions**

<i>Current Liabilities</i>			
Sundry Creditors	2,40,500		
Outstanding wages	25,000		
Outstanding business expenses	<u>25,000</u>	2,90,500	
<i>Provisions</i>			
Proposed Dividend	1,59,200		
Tax on Distributed Profit	23,880		
Taxation	<u>1,30,000</u>	<u>3,13,080</u>	
		<u>6,03,580</u>	

**Illustration 12**

The following balances have been extracted from the books of Arts and Crafts Limited as on 31st March, 2011:

(Figures in ₹ thousands)

	₹		₹
Freehold land	28,000	Income from Investment	1,200
Buildings	7,500	Provision for doubtful	
Furniture	2,000	debts (1st April, 2010)	200
Debtors	10,000	Creditors	2,000
Stock (31st March, 2011)	4,000	Provision for depreciation:	
Cash-at-bank	500	(1st April, 2010)	
Cash-in-hand	100	Building	500
Cost of goods sold	30,000	Furniture	400
Salaries and wages	1,500	Suspense	250
Miscellaneous expenses	800	Equity shares capital	36,750
Investment in shares	18,000	6% Cumulative pref. share	
Interest	300	Capital	8,000
Bad debts	100	Securities Premium	1,000
Repairs and maintenance	150	Bank Overdraft	5,000
Advance payment of Income-tax	600	Sales	48,000
		Profit and Loss A/c	
		(1st April, 2010)	<u>250</u>
	<u>1,03,550</u>		<u>1,03,550</u>

The following further particulars are available:

- (1) The land was revalued on 1st January, 2011 at ₹3,50,00,000 by an expert valuer, but no effect has been given in the books although the Directors have decided to adjust the relevant amount.
- (2) Provision for doubtful debt is to be adjusted to 2.5% on the amount of debtors.
- (3) Equity share capital is composed of ₹10 shares, 36,40,000 fully paid and 50,000 on which final call of ₹3 remains unpaid.
- (4) Suspense amount represents money received from the new allottee for re-issue of 50,000 shares forfeited during the year for non-payment of the final call, but no entry for adjustment thereof has been passed.
- (5) Provision for taxation is to be made at 40%.
- (6) Market value of investments was ₹1,85,00,000 on 31st March, 2011.
- (7) The company is managed by the Directors who are entitled to a remuneration of 3% on the annual net profits.

(8) Depreciation to be charged on written down value of:

Building at 5%.

Furniture at 10%.

(9) The land and buildings of the company are mortgaged in favour of the bank as security for overdraft sanctioned up to a limit of 2,50,00,000.

(10) Dividend on cumulative preference shares were in arrears for 5 years upto 31st March, 2011. The directors have recommended payment of dividend for two years.

You are required to prepare the Profit and Loss Account for the year ended 31st March, 2011 and a Balance Sheet as on that date. Ignore previous year's figures.

**Solution:**

**Profit and Loss Account of Art and Crafts Ltd.  
for the year ended 31<sup>st</sup> March, 2011**

<i>Dr.</i>	<i>Cr.</i>
	₹
To Cost of sales	3,00,00,000
To Salaries and wages	15,00,000
To Miscellaneous expenditure	8,00,000
To Interest	3,00,000
To Provision for bad debts	2,50,000
<i>Add: Bad debts</i>	<u>1,00,000</u>
	3,50,000
<i>Less: Existing provision</i>	<u>2,00,000</u>
	1,50,000
To Repair and maintenance	1,50,000
To Depreciation on:	
Building	3,50,000
Furniture	<u>1,60,000</u>
	5,10,000
To Managerial remuneration	4,75,200
To Provision for income-tax	61,25,920
To Profit for the year	<u>91,88,880</u>
	<u>4,92,00,000</u>
To Proposed dividend on preference shares	9,60,000
To Tax on Distributed Profit @ 15%	1,44,000
To Balance c/d	<u>83,34,880</u>
	<u>94,38,880</u>
By Sales	4,80,00,000
By Income from investments	12,00,000
By Balance as per last year	2,50,000
By Profit for the year c/d	91,88,880
	<u>94,38,880</u>

**Balance Sheet of Art and Crafts Ltd.  
as at 31st March, 2011  
(Horizontal Form)**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets</i>	
Authorised Capital		Freehold Land	
Issued and Subscribed		at cost	2,80,00,000
Capital:		<i>Add: Appre-</i>	
36,900 Equity shares of		ciation	<u>70,00,000</u>
₹10 each fully			3,50,00,000
paid-up	3,69,00,000	Building at cost	75,00,000
6% Cum. preference		<i>Less: Depreciation</i>	
share capital	80,00,000	to date	<u>8,50,000</u>
			66,50,000
<i>Reserves and Surplus</i>		Furniture at cost	20,00,000
Capital reserve		<i>Less: Depreciation</i>	
Forfeited shares	1,00,000	to date	<u>5,60,000</u>
Profit on revaluation			14,40,000
of land	<u>70,00,000</u>	<i>Investment:</i>	
	71,00,000	Investment in shares	
Securities Premium		at cost (market value	
Account	10,00,000	₹1,85,00,000)	1,80,00,000
Profit and Loss Account	83,34,880	<i>Current Assets Loans</i>	
<i>Secured Loan:</i>		<i>and Advances:</i>	
Bank Overdraft	50,00,000	A. Current Assets:	
(Secured by mortgage		Stock-in-trade	
on Land and Bldg.)		(value at cost or	
<i>Unsecured Loan:</i>		- market value which-	
<i>Current Liabilities and</i>		ever is lower)	40,00,000
<i>Provisions</i>		- Debtors	1,00,00,000
A. Current Liabilities:		<i>Less: Provision for</i>	
Creditors	20,00,000	Doubtful Debts	<u>2,50,000</u>
Managerial remuneration			97,50,000
outstanding	4,75,200	Cash in hand	1,00,000
B. Provisions:		Bank balance	5,00,000
Provision for income-tax	61,25,920	B. Loans and Advances:	
Proposed dividend on		Advance Payment of	
Preference shares	9,60,000	Income-tax	6,00,000
Tax on Distributed Profit	<u>1,44,000</u>	Miscellaneous expenditure	-
	<u>7,60,40,000</u>		<u>7,60,40,000</u>

Vertical form:

**Balance Sheet of Art and Crafts Ltd. as at 31st March, 2011**

	Schedule No.	Figure as at the end of current financial year	
<i>I. Sources of Funds</i>			
1. Shareholders' funds:			
(a) Capital	...	4,49,00,000	
(b) Reserves and Surplus	...	<u>1,64,34,880</u>	6,13,34,880
2. Loans funds:			
(a) Secured loans	...	50,00,000	
(b) Unsecured loans	...	<u>—</u>	<u>50,00,000</u>
Total			6,63,34,880
<i>II. Application of Funds</i>			
1. Fixed assets:			
(a) Gross blocks		4,45,00,000	
(b) Less Depreciation	...	<u>14,10,000</u>	
(c) Net blocks	...		4,30,90,000
(d) Capital work-in-progress	...		<u>—</u> 4,30,90,000
2. Investments			1,80,00,000
3. Current Assets, Loans and Advances			
(a) Inventories	...	40,00,000	
(b) Sundry Debtors	...	97,50,000	
(c) Cash and bank balances	...	6,00,000	
(d) Other current assets	...	—	
(e) Loans and advances	...	<u>6,00,000</u>	1,49,50,000
Less: Current Liabilities and Provisions			
(a) Liabilities	...	24,75,200	
(b) Provisions	...	<u>72,29,920</u>	<u>97,05,120</u> 52,44,880
4. (a) Miscellaneous expenditure (to the extent not written off or adjusted)	...		
(b) Profit and loss account	...		
Total			<u>6,63,34,880</u>

**Note:** There is a contingent liability of ₹14,40,000 for Arrears of Dividend on Cumulative Preference Shares for 3 years.

**Working Notes:**

(1) Depreciation has to be calculated on the written down value as follows:

Building	5% on ₹(75,00,000 – 5,00,000)	=	₹3,50,000
Furniture	10% on ₹(20,00,000 – 4,00,000)	=	₹1,60,000

(2) Managerial remuneration has been calculated as follows:

Profit before remuneration and provision for taxation	1,57,90,000
Add: Provision for bad debts	<u>1,50,000</u>
	1,59,40,000
Less: Bad debts written-off	<u>1,00,000</u>
	<u>1,58,40,000</u>

Remuneration @ 3% on ₹1,58,40,000 as = ₹4,75,200

(3) Provision for tax:

Net profit before Income-tax = ₹1,53,14,800  
Provision for tax @ 40% = ₹61,25,920

(4) Suspense accounts is to be adjusted as follows:

		₹	₹
(a) Equity Share Capital A/c	Dr.	3,50,000	
To Shares Forfeited A/c			3,50,000
(b) Suspense A/c	Dr.	2,50,000	
Shares Forfeited A/c	Dr.	2,50,000	
To Equity Share Capital A/c			5,00,000
(c) Shares Forfeited A/c	Dr.	1,00,000	
To Capital Reserve A/c			1,00,000

(5) Profit on re-valuation of freehold land has to be treated as Capital Profits and has been credited to Capital Reserve.

**Illustration 13**

The following balances have been extracted from Pioneer Trades Ltd. as on 30th September, 2010:

		(₹ in 000's)
	Dr.	Cr.
	₹	₹
Share Capital (Authorised and Issued):		
Equity (15,00,000 shares of ₹100 each)		1,50,000
8% Redeemable Preference (40,000 shares)		4,000
Securities Premium		2,500
Preference Share Redemption	4,800	
General Reserve		10,000
Land (Cost)	30,000	
Buildings (cost less depreciation)	70,000	
Furniture (cost less depreciation)	2,000	

Motor Vehicle (cost less depreciation)	3,500	
Trading Account-Gross Profit		90,000
Establishment charges	25,000	
Rates, taxes and insurance	1,200	
Commission	600	
Discount received		500
Interest on investments		800
Depreciation	6,000	
Sundry office expenses	6,000	
Payment to auditors	400	
Sundry debtors and creditors	10,660	2,560
Profit and loss account (as on 30.9.2009)		1,000
Unpaid dividend		200
Cash-in-hand	1,200	
Cash-at-bank in current account	19,500	
Security deposit	1,000	
Outstanding expenses		600
Investments in G.P. Notes	20,000	
Stock-in-trade (at or below cost)	35,300	
Provision for taxation (y/e 30.9.2009)		7,000
Income-tax paid under dispute (y/e 30.9.2009)	10,000	
Advance payment of income-tax	<u>22,000</u>	
	<u>2,69,160</u>	<u>2,69,160</u>

The following further details are available:

1. The preference shares were redeemed on 1st October, 2009 at a premium of 20% but no entries were passed for giving effect thereto, except payment standing to the debit of Preference Share Redemption Account.
2. Depreciation as provided upto 30th September, 2009 is as follows:

	₹
(a) Buildings	21,000 thousand
(b) Furniture	2,000 thousand
(c) Motor Vehicles	6,000 thousand
3. Establishment charges include ₹1,800 thousand paid to Managing Director as remuneration in terms of the agreement which provides for a remuneration of 5% of annual net profits.
4. Payment to Auditors includes ₹100 thousand for taxation work in addition to audit fees.
5. Market value investments on 30th September, 2010 ₹18,000 thousand.
6. Sundry debtors include ₹4,000 thousand due for a period exceeding six months.
7. All receivables and deposits are considered good for realisation.

8. Income-tax demand for the year ended 30.9.2009 ₹10,000 thousand has not been provided for against which an appeal is pending.
9. Income-tax to be provided @ 40%.
10. Directors recommended payment of dividend on equity shares at the rate of 12%.
11. Ignore previous year's figures.

You are required to prepare the Profit and Loss Account for the year ended 30th September, 2010 and a Balance Sheet as at that date.

**Solution:**

**Profit and Loss Account of Pioneer Traders Ltd.  
for the year ended 30th September, 2010**

(₹ in 000's)

Dr.	Cr.		
Particulars	₹	Particulars	₹
To Establishment Charges	25,000	By Gross profit b/d	90,000
Less: Remuneration to M.D.	<u>1,800</u>	By Discount received	500
	23,200	By Interest on Investment	800
To Rates, taxes and insurance	1,200		
To Commission	600		
To Depreciation	6,000		
To Sundry office expenses	6,000		
To Payment to auditors:			
Audit fees	300		
Fees for taxation work	<u>100</u>		
	400		
To Remuneration to managing director @5% on Profits	2,695		
To Provision for taxation	20,482		
To Profit for the c/d	<u>30,723</u>		
	<u>91,300</u>		
To Provision for taxation for the year ended 30.9.2009	3,000	By Balance as per last year	1000
To General reserve (2.5% of current year's profit)	768	By Profit for the year b/d	30,723
To Proposed dividend @ 12% on paid-up capital	18,000		
			<u>91,300</u>

	₹	₹
To Tax on Distributed Profit @ 15%	2,700	
To Balance c/d	<u>7,255</u>	
	<u>31,723</u>	<u>31,723</u>

Horizontal Form:

**Balance Sheet of Pioneer Traders Ltd.  
As at 30th September, 2010**

(₹ in 000's)

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
	₹		₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital - 15,00,000 Equity Shares of ₹. 100 each	<u>1,50,000</u>	Land at Cost	30,000
Issued and Subscribed Capital - 15,00,000 Equity Shares of ₹. 100 each, fully paid-up	1,50,000	Building at Cost	91,000
<i>Reserves and Surplus:</i>		Less: Depreciation to date	<u>21,000</u> 70,000
Capital Redemption Reserve Account	4,000	Furniture	4,000
Securities Premium Account	1,700	Less: Depreciation to date	<u>2,000</u> 2,000
General Reserve as per last year's balance sheet	10,000	Motor Vehicles	9,500
Less: Transfer to Capital Redemption Reserve	<u>4,000</u> 6,000	Less: Depreciation to date	<u>6,000</u> 3,500
<i>Added during the year</i>	<u>768</u>	<i>Investments:</i>	
Profit and Loss Account	7,255	Investments in G.P. Note (market value ₹. 18,000 thousand)	20,000
<i>Secured Loan:</i>	—	<i>Current Assets</i>	
<i>Unsecured Loan:</i>	—	<i>Loans and Advances:</i>	
<i>Current Liabilities and Provisions:</i>		<i>A. Current Assets</i>	
<i>A. Current Liabilities:</i>		Stock-in-trade (at or below cost)	35,300
Sundry creditors	2,560	Sundry Debtors	
Unpaid dividend	200	Debts Outstanding For more than 6 months	4,000
		Other debts	<u>6,660</u> 10,660
		Cash in hand	1,200
		Bank balance in current account	19,500

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350

Outstanding expenses	600	<i>B. Loans and Advances:</i>	
Remuneration payable to Managing Director:		Security deposit	1,000
Remuneration @ 5% on Net profit	2,695	Income-tax paid	
		Under dispute	10,000
		Advance payment of tax	22,000
<i>Less: Amount already paid</i>	<u>1,800</u>		
	895		

*B. Provisions*

Provision for taxation for 2008-09	10,000		
Provision for taxation for 2009-10	20,482		
Proposed dividend	18,000		
Tax on Distributed Profit	<u>2,700</u>		
	<u>2,25,160</u>		<u>2,25,160</u>

*Vertical Form:*

**Balance Sheet of Pioneer Trades Ltd.  
As at 30th September, 2010**

(₹ in 000)

*Schedule Figure as at the end of current  
No. financial year*

*I. Sources of Funds*

## 1. Shareholders' funds

(a) Capital	...	1,50,000	
(b) Reserves and Surplus	...	<u>19,723</u>	<u>1,69,723</u>

## 2. Loan funds:

(a) Secured loans	...	—	—
(b) Unsecured loans	...	—	—
Total			<u>1,69,723</u>

*II. Application of Funds*

## 1. Fixed Assets

(a) Gross blocks	...	1,34,500	
(b) Less: Depreciation	...	<u>29,000</u>	
(c) Net blocks	...		1,05,500
(d) Capital work-in-progress	...		<u>—</u> 1,05,500

2. Investments 20,000

3. Current Assets, Loans and Advances			
(a) Inventories	...	35,300	
(b) Sundry debtors	...	10,660	
(c) Cash and bank balance	...	20,700	
(d) Other current assets			
(e) Loans and advances		<u>33,000</u>	99,660
Less: Current Liabilities and Provisions:			
(a) Liabilities		4,255	
(b) Provisions		<u>51,182</u>	<u>55,437</u>
Net current assets			44,223
4. (a) Miscellaneous expenditure (to the extent not written off or adjusted)			—
(b) Profit and loss account			—
Total			<u>1,69,723</u>

#### Working Notes:

₹

##### 1. Calculation of managerial remuneration -

Profit before managerial remuneration	5,39,00,000
= 9,13,00,000 - 3,74,00,000 =	
∴ Remuneration = $\frac{5}{100} \times 5,39,00,000$	26,95,000
Less: Remuneration already paid	<u>18,00,000</u>
Remuneration still payable	<u>8,95,000</u>

##### 2. Calculation of Provision for taxation -

Profit before managerial remuneration	5,39,00,000
Less: Managerial remuneration	<u>26,95,000</u>
	<u>5,12,05,000</u>

$$\text{Provision for taxation} = ₹ 5,12,05,000 \times \frac{40}{100} = ₹ 2,04,82,000$$

3. Income-tax paid for the year 2008-09 under dispute has to be shown as an advance payment until the dispute is settled.

4. As the Income-tax for the year 2008-09 has already been paid, further provision of ₹ (1,00,00,000 – 70,00,000) = ₹ 30,00,000 has been made below the line.

Otherwise, it could have been shown as a contingent liability.

5. As the rate of dividend is 12% of paid-up capital, 2.5% of the current year's profit is transferred to statutory reserve.

6. Redeemable Preference Share Capital has to be adjusted as follows:

		(₹ in 000's)	
		₹	₹
(a) 8% Redeemable Preference Capital A/c	Dr.	4,000	
Premium on Redemption of Preference Shares A/c	Dr.	800	
	To Preference Share Redemption A/c		4,800
(b) General Reserve A/c	Dr.	4,000	
	To Capital Redemption Reserve A/c		4,000
(c) Securities Premium A/c	Dr.	800	
	To Premium on Redemption of Preference Shares A/c		800

#### Illustration 14

The following balances are extracted from the books of PQ Ltd., as on 31st March, 2011:

	₹
Share Capital	40,00,000
Cash-in-hand	62,000
Repairs and maintenance	86,0000
Raw materials at cost	26,70,000
Furniture	1,22,000
Sundry Creditors	34,00,000
Directors' fees	4,000
Plant and machinery	43,00,000
Miscellaneous expenses	6,10,000
General reserve	30,00,000
Land	3,00,000
Finished goods at cost	31,00,000
Sales	4,23,00,000
Development rebate reserve	10,00,000
Building	7,41,000
Cash at bank	80,000
Provision for taxation	21,00,000
Sundry debtors	14,00,000
Raw materials consumption	2,86,00,000
Staff advances	53,000
Advances from customers	5,00,000
Salaries, wages and bonus	1,16,00,000
Cash credit from bank	1,25,000
Power	88,000
Prepaid expenses	46,000
Rent	53,000
Travelling and conveyance	41,000

Auditors' fees	15,000
Miscellaneous income	5,46,000
Income-tax advance	30,00,000

The following further information is also given:

1. The authorised share capital of the company is 80,000. Equity shares of ₹100 each which has been issued and subscribed to the extent of 50%.
2. During the year a pending income-tax assessment for an earlier year was finalised and the tax payable, after giving credit for advance tax paid for that year amounting to ₹7,00,000 was finalised at ₹8,50,000. The company did not dispute this tax assessment. A provision of ₹8,00,000 has been made for that year.
3. Tax provision @40% is to be made on current year's profits.
4. 15% dividend on the paid-up share capital is recommended by the Directors.
5. The closing stock of finished goods at cost is ₹56,00,000.
6. The development rebate reserve is no longer required.
7. Depreciation on assets amounting to ₹4,30,000 on plant and machinery, ₹13,000 on furniture and ₹38,000 on building has been debited to miscellaneous expenditure.

Prepare Profit and Loss Account and Balance Sheet as on 31.3.2011.

**Solution:**

**Profit and Loss Account of PQ Limited  
for the year ended 31st March, 2011**

<i>Dr.</i>	<i>Cr.</i>
₹	₹
To Opening stock of finished goods	By Sales
31,00,000	4,23,00,000
To Raw materials consumed	By Closing stock of finished goods
2,86,00,000	56,00,000
To Salaries, wages and bonus	By Miscellaneous income
1,16,00,000	5,46,000
To Power	
88,000	
To Rent	
53,000	
To Repairs and maintenance	
86,000	
To Directors' fees	
4,000	
To Auditors' fees	
15,000	
To Travelling and conveyance	
41,000	
To Depreciation on:	
Plant and machinery	
4,30,000	
Furniture	
13,000	
Building	
<u>38,000</u>	
4,81,000	

To Miscellaneous expenditure	1,29,000		
To Provision for taxation	16,99,600		
To Net Profit c/d	<u>25,49,400</u>		
	<u>4,84,46,000</u>		<u>4,84,46,000</u>
To Provision for taxation for earlier years	7,50,000	By Net profit b/d	25,49,400
To Statutory reserve	1,27,470	By Development rebate reserve written back	10,00,000
To Proposed dividend	6,00,000		
To Tax on Distributed Profit @ 15%	90,000		
To Balance c/d	<u>19,81,930</u>		
	<u>35,49,400</u>		<u>35,49,400</u>

*Horizontal Form*

**Balance Sheet of PQ Limited  
as at 31st March, 2011**

<i>Liabilities</i>	<i>Amount</i>	<i>Assets</i>	<i>Amount</i>
	₹		₹
<i>Share Capital:</i>			
Authorised Capital- 80,000 Equity Shares of ₹100 each	80,00,000	<i>Fixed Assets:</i>	
Issued, Subscribed and Paid-up: 40,000 Equity Shares of ₹100 each, fully paid-up	40,00,000	Land at cost	3,00,000
<i>Reserves and Surplus:</i>		Building	7,79,000
General Reserves:		Less: Depre- ciation	<u>38,000</u> 7,41,000
Brought forward from previous year	30,00,000	Plant and machinery	47,30,000
Added during the year	<u>1,27,470</u>	Less: Depre- ciation	<u>4,30,000</u> 43,00,000
	31,27,470	Furniture	1,35,000
		Less: Depre- ciation	<u>13,000</u> 1,22,000
		<i>Investments:</i>	-
Development Rebate Reserve:		<i>Current Assets, Loans and Advances:</i>	
Brought Forward	10,00,000	A. Current Assets	
Less: Transferred to P&L A/c	<u>10,00,000</u>	Raw materials at cost	26,70,000
Profit and Loss A/c	19,81,930	Finished goods at cost	56,00,000
<i>Secured Loan:</i>		Sundry Debtors	14,00,000
Cash credit from Bank	1,25,000	Cash at bank	80,000
		Cash in hand	62,000

<i>Unsecured Loan:</i>		- B. Loans and Advances	
<i>Current Liabilities</i>		Staff advances	53,000
<i>and Provisions:</i>		Prepaid expenses	46,000
A. Current Liabilities:		Income-tax paid in	
Sundry Creditors	34,00,000	advance	23,00,000
Income-tax payable	8,50,000	<i>Miscellaneous Expenditure</i>	
Advance from customers	5,00,000	(to the extent not written off	
B. Provisions		or adjusted)	-
Provisions for taxation	29,99,600		
Proposed dividend	6,00,000		
Tax on Distributed Profit	<u>90,000</u>		
	<u>1,76,74,000</u>		<u>1,76,74,000</u>

*Vertical Form***Balance Sheet of PQ Limited As at 31st March, 2011**

	<i>Schedule</i>	<i>Figure as at the end of current</i>
	<i>No.</i>	<i>financial year</i>
<i>I. Sources of Funds</i>		
1. Shareholders' funds:		
(a) Capital	...	40,00,000
(b) Reserves and Surplus	...	<u>51,09,400</u> 91,09,400
2. Loans funds:		
(a) Secured loans	...	1,25,000
(b) Unsecured loans	...	- <u>1,25,000</u>
Total		<u>92,34,400</u>
<i>II. Application of Funds</i>		
1. Fixed assets:		
(a) Gross blocks	... 59,44,000	
(b) Less Depreciation	... <u>4,81,000</u>	
(c) Net blocks	... 54,63,000	
(d) Capital work-in-progress	... -	54,63,000
2. Investments		-
3. Current Assets, Loans and Advances		
(a) Inventories	... 82,70,000	
(b) Sundry Debtors	... 14,00,000	
(c) Cash and bank balances	... 1,42,000	
(d) Other current assets	... -	
(e) Loans and advances	... <u>23,99,000</u>	1,22,11,000
Less: Current Liabilities and		

Provisions			
(a) Liabilities	...	47,50,000	
(b) Provisions	...	<u>36,89,600</u>	<u>84,39,600</u>
Net current assets			37,71,400
4. (a) Miscellaneous expenditure (to the extent not written of or adjusted)	...		-
(b) Profit and loss account	...		-
Total			<u>92,34,400</u>

**Working Notes:**

1. Income-tax liability for an earlier year comes to ₹(7,00,000 + 8,50,000) = ₹15,50,000 against which a provision of ₹8,00,000 has been made. As such the difference of ₹7,50,000, i.e. ₹(15,50,000 - 8,00,000) has been shown in the appropriation account, i.e., below the line.

2. Out of the tax liability of ₹15,50,000 a sum of ₹7,00,000 included advance tax paid has been adjusted and the balance ₹(15,50,000 - 7,00,000) = ₹8,50,000 has been shown as a current liability.

3. Provision for taxation has been arrived as follows:

	₹
Provision for taxation as per trial balance	21,00,000
Less: Provision for an earlier year adjusted	8,00,000
Balance left	13,00,000
Add: Current year's provision (40% of ₹42,49,000)	<u>16,99,600</u>
	<u>29,99,600</u>

4. Income-tax paid in advance to be carried forward has been arrived as follows:

	₹
Income-tax paid in advance as per trial balance	30,00,000
Less: Income-tax for an earlier year adjusted	<u>7,00,000</u>
	<u>23,00,000</u>

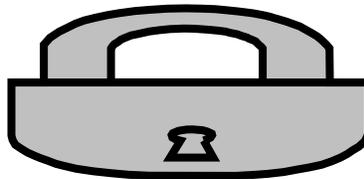
5. As the rate of dividend recommended by the Directors is 15% a sum equal to 5% of the net profits is required to be transferred to general reserve.

**LESSON ROUND UP**

- Final accounts of a company consist of balance sheet as at the end of the accounting period and profit and loss account for that period.

- Section 211 of the Companies Act, 1956 prescribes the form and contents of balance sheet and profit and loss account of a company.
- Balance sheet of a company shall be prepared in the form set out in Part I and profit and loss account of a company shall comply with the requirements of Part II of Schedule VI of the Companies Act, 1956.
- Profit and Loss Appropriation Account shows the disposal of the net profit as disclosed by the Profit and Loss Account proper.
- The term 'Provision' means any amount written off or retained by way of providing for depreciation, renewals or diminution in value of assets or retained by way of providing for any known liability of which the amount cannot be determined with substantial accuracy.
- Reserves refer to amounts set aside out of profits or surplus of the company which are neither meant to meet any loss in respect of depreciation, renewals or diminution in the value of assets nor meant to meet any known liability.
- The term managerial remuneration includes remuneration payable to managing director, whole-time directors, part-time directors and manager.
- The total managerial remuneration payable by a public company or a private company which is a subsidiary of a public company to its directors including any managing or whole-time director or manager is limited to 11% of the net profits.
- Sections 349 and 350 of the Companies Act contain the provisions relating to the manner of determination of net profits for the purpose of calculating the managerial remuneration.
- Dividend refers to that part of the profits of a company which is distributed by the company among its shareholders by way of return on investments made by the shareholders in the shares, of the company.
- Companies declaring distributing or paying dividends are liable to pay tax on the same at prescribed rate which is known tax on distributed profit.
- Interim dividend means a dividend paid to the shareholders of a company in anticipation of profits of a period before the accounts of the company for that period have been prepared.
- When a company accumulates huge reserves out of its profits which is much in excess of the needs of the company, the excess amount can be distributed among the existing shareholders of the company by way of bonus shares.

### SELF TEST QUESTIONS



1. State how the matters given below will be dealt with while preparing the profits and loss account for the year ended 31.3.2011.
  - (i) A company whose profit runs into lakhs of rupees and has large inventories finds at the end of March 2011 that the stock sheets, for 31.3.2010 were over-cast by ₹10,000.

- (ii) The Provision of tax at the end of 31.3.2010 stood at ₹1,50,000; during 2010-11 the tax liabilities upto 31.3.2010 were settled for ₹1,37,000. Provision required in respect of 2010-11 is ₹41,000.
- (iii) Government has allowed a refund of excise duty with effect from 1st January, 2010; it works out @ ₹5,000 p.m.
- (iv) The company entered into a speculative deal in raw materials and earned a profit of ₹1,00,000.
- (v) Government imposed a penalty of ₹30,000 for non-payment of P.F. dues in time.

[Ans.: (i) No special treatment as the amount is not material; (ii) Debit ₹41,000 to Profit and Loss Account and credit ₹13,000 to Profit and Loss Appropriation A/c; (iii) Show ₹15,000 (for January-March 2010) as income and deduct the remaining amount from excise duty; (iv) Show ₹1,00,000 as income; (v) Disclose the amount of the penalty if not shown separately in the Profit and Loss Account.]

2. A company acquires plant and machinery on 1st October, 2010; it paid ₹30,00,000 to the supplier and incurred transport charges of ₹1,00,000 installation charges of ₹1,00,000 in addition to repairs of ₹1,40,000 because of accidental damage during transit. Depreciation according to Schedule XIV is 15% and its life is estimated at 15 years. The accounts are closed on 31st March each year. What is the figure at which the asset will be capitalised and what is the depreciation charge for the first year?

[Ans.: ₹32,00,000; ₹2,40,000 (w.d.v. method) or ₹1,01,333 (straight line basis).]

3. (i) A company has ₹10,00,000 13.5% debentures at issue; interest is payable on 30th September and 31st March, interests warrants being issued on the 6th October and 6th April respectively. The company closes its books of accounts on 31st March. Show the relevant items in the balance sheet.
- (ii) A company pays interest on 30th June and 31st December on its 50,000 15% debentures of ₹100 each; the books are closed on 31st March. How will the relevant items appear in the company's balance sheet?

[Ans.: (i) Under Secured Loans: 13.5% Debentures ₹10,00,000 and Interest outstanding (Accrued and Due) ₹67,500; (ii) Under secured loan: 15% Debentures ₹50,00,000 and under Current Liabilities: Interest Accrued but not Due ₹1,87,500.]

4. Y Ltd. earned a profit after tax of ₹5,00,000 in 2010-11 and it wanted to pay a dividend of 18% on its capital of ₹15,00,000. The tax on distributed profit is 15% and surcharge being 10% and 2% education cess. What will be the balance left in the Profit and Loss Account? [Ans.: ₹1,47,059.]

5. S Ltd. has been paying dividend @ 12% on its capital of ₹30 lakhs; its free reserves totalled at the end of 2009-10 to ₹20,00,000. In 2010-11 it suffered a loss of ₹2,30,000 but it still wants a dividend, if necessary by drawing from reserves. What is the maximum rate of dividend that will be permissible?

[Ans.: 10%]

6. D Ltd. wants to pay a dividend but finds itself short of cash. There is, therefore, a proposal that the company should distribute among the shareholders the shares held by it in F Ltd. by way of dividend. Advise the company.

[Ans.: Dividend must be paid only in cash. Dividend in specie is not lawful.]

7. State how you will treat the following while preparing the final accounts of the company concerned for the year ending 31.3.2011.

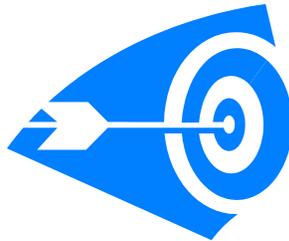
- (i) Land and Buildings (Cost ₹5,00,000 depreciation provided ₹80,000) sold for ₹7,50,000.
- (ii) It was discovered in September 2010 that the purchase invoice of ₹50,000 dated 11.2.2009 was not entered in the book at all; accounts for 2008-09 were passed at the AGM in August, 2010.
- (iii) While preparing the accounts for 2009-2010 closing stock was valued at market price ₹6,20,000 instead of cost which was ₹6,50,000.
- (iv) In June, 2010 post manufacturing excise duty totaling ₹6,00,000 was paid in respect of 2008-09 and 2009-2010.
- (v) The market value of the quoted investments is ₹2,25,000 as against the cost of ₹2,50,000.
- (vi) Interest received ₹13,500 after tax being deducted at 10%.
- (vii) Railway claim for goods lost in transit in 2008-09 costing ₹40,000 settled in 2009-10 for ₹30,000. No entry was passed in 2008-09.
- (viii) Sales tax, collected from customers, ₹1,50,000 against which amount paid is ₹1,20,000.
- (ix) Subsidy, ₹1,00,000 received from Government for installation of generating set.
- (x) Balance held in the Bank of Iraq, Baghdad, ₹25,000.

[Ans.: (i) ₹2,50,000 capital reserve; ₹80,000 revenue income; (ii) Debit Profit and Loss Appropriation Account for 2008-09; (iii) No Special treatment; the method of valuation should be disclosed in the balance sheet; (iv) Debit Profit and Loss Appropriation Account for 2008-09; (v) Disclose the market value in the balance sheet - no provision need be made for the fall in the value; (vi) Either show gross income in profit and loss account of ₹15,000 or net ₹13,500 indicating ₹1,500, tax deducted at source; (vii) ₹30,000, income, should be shown as a separate item, preferably below the line; (viii) ₹30,000 should be shown as a current liability; (ix) Should be shown as a capital reserve or as a deduction from the cost of the generating set; (x) The name of the bank should be disclosed in the balance sheet along with the maximum balance held at any time during the year.]

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STUDY VI  
**CONSOLIDATION OF ACCOUNTS**

**LEARNING OBJECTIVES**



After studying this Study Lesson you will be able to:

- Understand the concept of holding company and subsidiary company.
- Familiarize the legal requirements for preparation of final accounts of holding company.
- Prepare consolidated balance sheet and profit and loss account.
- Make appropriate accounting adjustments required for the preparation of consolidated balance sheet.
- Understand the concept of minority interest in consolidation of accounts.
- Appreciate the treatment of pre-acquisition profits and losses of the subsidiary company.
- Make adjustment regarding profit and loss on revaluation of assets of subsidiary company.
- Understand the calculation of goodwill or cost of control.
- Make adjustment for inter-company unrealized profits and inter-company transactions.
- Understand the treatment of bonus issue on consolidation of accounts.
- Make adjustment on dividend received from subsidiary company.

**1. DEFINITION**

*Holding Company:* A holding company is one which acquires all or a majority of the equity shares of any other company called subsidiary company in order to have control over the subsidiary company. The acquisition of controlling interest by the holding company does not, in any way, affect the separate legal entity of the subsidiary company.

*Subsidiary Company:* The companies Act, 1956 defines a subsidiary company and by implication points out the characteristics of a holding company. Section 4 of the Companies Act, lays down that a company shall be deemed to be a subsidiary of another if, but only if -

- (a) that other controls the composition of its Board of directors; or

- (b) that other:
- (i) where the first mentioned company is an existing company in respect of which the holders of preference shares issued before the commencement of this Act have the same voting rights in all respects as the holders of equity shares, exercises or controls more than half of the total voting power of such company;
  - (ii) where the first mentioned company is any other company, holds more than half in nominal value of its equity share capital; or
- (c) the first mentioned company is a subsidiary of any company which is that other's subsidiary.

*Example:* Company B is a subsidiary of Company A, and Company C is a subsidiary of Company B. Company C is a subsidiary of Company A by virtue of clause (c) above. If Company D is a subsidiary of Company C, Company D will be subsidiary of Company B and consequently also of Company A and so on.

## **2. LEGAL REQUIREMENTS FOR PREPARATION AND PRESENTATION OF FINAL ACCOUNTS OF A HOLDING COMPANY AND ITS SUBSIDIARY/ SUBSIDIARIES**

Although, the final accounts of a holding company and its subsidiary or subsidiaries are prepared in the same way as in any other company. Part 1 of Schedule VI to the Companies Act, 1956 requires that the Balance Sheet of a holding company must disclose the following:

- (i) Loans and advances from subsidiary showing separately under proper head of secured and unsecured loans and current debts for goods and services.
- (ii) Loans and advances to subsidiary showing separately (a) good and in respect of which the company is fully secured; (b) good for which the company holds the borrower's personal security only; and (c) bad or doubtful.
- (iii) Investments in subsidiary in the form of shares, debentures, etc. showing separately shares fully paid-up and partly paid-up and distinguishing the different classes of shares.

Besides, Part II of Schedule VI to the Companies Act, 1956 requires that the Profit and Loss Account of the holding company must disclose the following:

- (i) Dividend received from subsidiary; and
- (ii) Provisions made for losses of subsidiary.

Moreover, Section 212 of the Companies Act, 1956 requires that the following documents in respect of each subsidiary company must be attached to the balance sheet of a holding company:

- (i) a copy of the balance sheet of the subsidiary;
- (ii) a copy of its profit and loss account;
- (iii) a copy of the report of the Board of directors;
- (iv) a copy of the report of its auditors;

- (v) a statement of the holding company's interest and profit in the subsidiary;
- (vi) a statement regarding changes in interest, assets and liabilities in-between the period from the date of closing the accounts of subsidiary upto the date of closing of the holding company when the two dates do not coincide; and
- (vii) if the Board of directors of the holding company for any reason is unable to obtain information about profits of the subsidiary report in writing to that effect.

Section 212 further states that the gap or interval between the close of the financial year of the subsidiary company and that of the holding company cannot exceed six months. But the Central Government has been given power under Section 213 of the Act to declare that the financial year of the subsidiary shall end with that of the holding company.

The statement of interest and profit referred to (v) above should contain the following particulars:

- (a) the extent of the holding company's interest in the subsidiary as at the end of the financial year of the subsidiary.
- (b) the net aggregate amount of subsidiary's profits after deducting loss or vice-versa so far as it concerns members of the holding company, not dealt with in the accounts of holding company.
  - (i) of the aforesaid financial year of the subsidiary; and
  - (ii) for the previous years of the subsidiary since it became a subsidiary of the holding company.
- (c) the net aggregate amount of subsidiary amount of subsidiary's profits after deducting loss or vice-versa so far as those profits are dealt with or provision is made for loss separately for the financial year and previous financial years of subsidiary after it became subsidiary.

**Note:** (b) and (c) concern only revenue profits earned after the date of acquisition of control. Profits may be assumed as accruing from day to day.

The statement regarding changes in interest, assets and liabilities referred to (vi) above when the accounting years of the holding company and its subsidiary do not coincide should contain the following particulars:

- (a) if there has been any change, the extent of such change in the holding company's interest in the subsidiary during the period of the gap or interval.
- (b) Details of any material changes during the said gap or interval in respect of:
  - (i) the subsidiary's fixed assets;
  - (ii) its investments;
  - (iii) moneys lent by it; and
  - (iv) moneys borrowed by it for any purpose other than for meeting current liabilities.

### 3. CONSOLIDATION OF BALANCE SHEET AND PROFIT AND LOSS ACCOUNT

Consolidation of Balance Sheet and Profit and Loss Account implies preparation of a single Balance Sheet and Profit and Loss Account of the holding company and its subsidiaries by aggregating all items of assets, liabilities, incomes, expenses, etc., of the holding company and its subsidiaries. This is also known as Group Accounts. Although, the Companies Act, 1956 does not make it obligatory on the part of the holding company to prepare group accounts or consolidated accounts, it is desirable for a holding company to prepare a consolidated Balance Sheet and Profit and Loss Account in order to have a clear position. The various outside parties concerned with the holding company and its subsidiaries may also be interested in the consolidated final accounts.

### 4. PREPARATION OF CONSOLIDATED BALANCE SHEET

The following are the most important points which reserve special consideration in the preparation of the consolidated Balance Sheet of the holding company and its subsidiaries.

### 5. INVESTMENT IN SHARES OF SUBSIDIARY COMPANY

(a) when all the shares of the subsidiary are held by the holding company - (acquired at par): In such a case, the investment in shares of subsidiary company represent the ownership of the holding company in the equity or net assets of the subsidiary company. Net assets are the difference between the total assets and the liabilities of the subsidiary. Net assets are also equal to the total of all accounts relating to the shareholders, i.e., Share Capital, Reserves, Profit and Loss Account balance, etc. The principle of consolidation is very simple in this case. While preparing the Consolidated Balance Sheet, investments of the holding company in shares of subsidiary company have simply to be replaced by the net assets (i.e., total assets and liabilities) of subsidiary company.

#### Illustration 1

The Balance Sheet of the H Ltd. and S Ltd. as on 31st March, 2011 are given below:

<b>Balance Sheet</b>					
<i>Liabilities</i>	<i>H Ltd.</i>	<i>S Ltd.</i>	<i>Assets</i>	<i>H Ltd.</i>	<i>S Ltd.</i>
	₹	₹		₹	₹
<i>Share Capital:</i>			<i>Sundry Assets</i>	5,55,000	2,48,000
Shares of			<i>Investments</i>		
₹ 100 each	6,00,000	2,00,000	Shares in S Ltd.		
Profit and Loss Account	80,000	–	(at cost)	2,00,000	–
<i>Sundry Creditors</i>	<u>75,000</u>	<u>48,000</u>		<u>7,55,000</u>	<u>2,48,000</u>
	<u>7,55,000</u>	<u>2,48,000</u>			

Prepare the consolidated balance sheet of the holding company and its subsidiary as on 31st March, 2011.

**Solution:**

**Consolidated Balance Sheet of H Ltd. and its Subsidiary S Ltd.  
as at 31st March, 2011**

Liabilities	₹	Assets	₹
<i>Share Capital:</i>		<i>Sundry Assets:</i>	
Shares of ₹ 100 each	6,00,000	H Ltd.	5,55,000
<i>Reserves and Surplus:</i>		S Ltd.	<u>2,48,000</u> 8,03,000
Profit and Loss Account	80,000		
<i>Sundry Creditors:</i>			
H Ltd.	75,000		
S Ltd.	<u>48,000</u>		
	<u>1,23,000</u>		
			<u>8,03,000</u>

It is clear from the above consolidated balance sheet that the investment of H Ltd. in shares of S Ltd. amounting to ₹ 2,00,000 has been replaced by the net assets of S Ltd. amounting to ₹ 2,00,000 (i.e., Sundry Assets ₹ 2,48,000 - Sundry Creditors ₹ 48,000)

(b) *When some of the shares of the subsidiary are held by the outsiders* - In such a case, the outsiders holding shares in the subsidiary company will naturally claim a share in the net assets (i.e., the total assets minus liabilities) of the subsidiary company in proportion to their shareholding. While preparing the consolidated balance sheet, the amount of claim of the outside shareholders must be treated as a liability of the holding company and as such it has to be shown on the liabilities side of the balance sheet under the heading "Minority Interest". All the assets and liabilities of the subsidiary company have to be merged with those of the holding company which will eliminate investments of the holding company in the shares of the subsidiary company.

**Illustration 2**

The Balance Sheet of H Ltd. and S Ltd. as on 31st March, 2011 are given below:

**Balance Sheet**

Liabilities	H Ltd.	S Ltd.	Assets	H Ltd.	S Ltd.
	₹	₹		₹	₹
<i>Share Capital:</i>			<i>Sundry Assets</i>		
Shares of ₹ 100 each	6,00,000	2,00,000	Investments	6,05,000	2,48,000
Profit and Loss Account	80,000	-	1,500 shares in S Ltd. (at cost)	1,50,000	-
Sundry Creditors	<u>75,000</u>	<u>48,000</u>		<u>7,55,000</u>	<u>2,48,000</u>
	<u>7,55,000</u>	<u>2,48,000</u>			

Prepare the consolidated balance sheet of H Ltd. and S Ltd. as on 31st March, 2011.

**Solution:**

**Consolidated Balance Sheet of H Ltd. and its Subsidiary S Ltd.  
as at 31st March, 2011**

<i>Liabilities</i>	<u>₹</u> Assets	<u>₹</u>
<i>Share Capital:</i>		<i>Sundry Assets:</i>
Shares of ₹ 100 each	6,00,000	H Ltd.
Minority Interest	50,000	S Ltd.
<i>Reserves and Surplus:</i>		6,05,000
Profit and Loss Account	80,000	<u>2,48,000</u>
<i>Sundry Creditors:</i>		8,53,000
H Ltd.	75,000	
S Ltd.	<u>48,000</u>	
	<u>1,23,000</u>	
	<u>8,53,000</u>	<u>8,53,000</u>

In this case, out of total 2,000 shares of S Ltd. 1,500 shares are held by H Ltd. Therefore, number of shares held by outsiders = (2,000 – 1,500) = 500 which is 1/4th of the total shares.

The net assets of S Ltd. = ₹ (2,48,000 – 48,000) = ₹ 2,00,000.

Therefore, the claim of the outside shareholders in the net assets of S Ltd.  $\frac{1}{4} \times ₹ 2,00,000 = ₹ 50,000$ . This claim can also be ascertained by the paid-up value of the shares held by them i.e.,  $500 \times ₹ 100 = ₹ 50,000$ .

This amount has been shown as a liability under the heading minority interest.

**6. MINORITY INTEREST**

The claim of outside shareholders in the subsidiary company has to be assessed and shown as a liability in the consolidated balance sheet. In the above illustration, minority interest consists only the face value of the shares held by them. But it may so happen that the subsidiary company may have some accumulated profits and reserves or accumulated losses. Besides, it may have some profits or losses on account of revaluation of its assets on the date of acquisition of shares by the holding company. While calculating the amount of minority interest, all these items have to be taken into account and proportionate share of all such profits and reserves should be added to the amount of minority interest while proportionate share of all such losses should be deducted from the minority interest, thus,

Minority Interest = paid-up value of shares held by minority shareholders + proportionate share of the company's profits and reserves + proportionate shares of profits on revaluation of assets of the company – proportionate share of company's losses – proportionate share of loss on revaluation of assets of the company.

The company's profit and reserves or loss will include both pre-acquisition and post-acquisition profits and reserves or losses.

But, if there are some preference shares of the subsidiary company held by outsiders, the minority interest in respect of the preference share will consist only of the face value of such shares and the dividend due on such shares if there are profits.

**Illustration 3**

The Balance Sheet of H Ltd. and S Ltd. on 31st March, 2011 are given below:

<i>Liabilities</i>	<i>H Ltd.</i>	<i>S Ltd.</i>	<i>Assets</i>	<i>H Ltd.</i>	<i>S Ltd.</i>
	₹	₹		₹	₹
Share Capital:			Sundry Assets	6,55,000	2,88,000
Equity shares of ₹100 each	6,00,000	2,00,000	Investments:		
General Reserve	60,000	25,000	1600 shares of ₹100 each	1,60,000	-
Profit and Loss Account	80,000	15,000			
Creditors	<u>75,000</u>	<u>48,000</u>			
	<u>8,15,000</u>	<u>2,88,000</u>		<u>8,15,000</u>	<u>2,88,000</u>

H Ltd. acquired shares in S Ltd. on 31st March, 2011. Prepare the Consolidated balance sheet of H Ltd. and S Ltd. as on that date.

**Solution**

**Consolidated Balance Sheet of H Ltd. and its Subsidiary S Ltd.  
as at 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Sundry Assets:</i>	
Equity shares of ₹100 each	6,00,000	H Ltd.	6,55,000
Minority Interest	48,000	S Ltd.	<u>2,88,000</u> 9,43,000
General Reserve	60,000		
Capital Reserve:			
4/5th of 25,000	20,000		
4/5th of 15,000	<u>12,000</u>		
Profit and loss Account	80,000		
Creditors:			
H Ltd.	75,000		
S Ltd.	<u>48,000</u>		
	<u>9,43,000</u>		<u>9,43,000</u>

\* Profit in the subsidiary company as on the date of acquisition of control are capital profits.

Minority interest in this case has been ascertained in the following manner:

Paid-up value of 400 shares	₹ 40,000
Add : 1/5th shares of profit in S Ltd. 15,000 x 1/5	3,000
1/5 shares general reserve in S Ltd. 25,000 x 1/5	<u>5,000</u>
Minority Interest	<u>48,000</u>

**7. PRE-ACQUISITION PROFITS AND RESERVES OF SUBSIDIARY COMPANY**

Accumulated profits and reserves which appear in the balance sheet of the subsidiary company up to the date of acquisition of its shares by the holding company are called pre-acquisition profits and reserves. Both the holding company and the minority shareholders will have proportionate share in such profits and reserves. The share of the minority shareholders in such profit and reserves will be added to the amount of minority interest. But the holding company's proportionate share in such profits and reserve should be treated as capital profits and credited to Capital Reserve since the holding company cannot earn any revenue profits from its subsidiary before the shares are acquired in it. While preparing the consolidated balance sheet, this Capital Reserve should be shown on the liabilities side or if there is any Goodwill, it can be shown as a deduction from the Goodwill in the assets side.

**8. PRE-ACQUISITION LOSSES OF SUBSIDIARY COMPANY**

Accumulated losses of the subsidiary company upto the date of acquisition of shares by the holding company are called pre-acquisition losses. Both the holding company and the minority shareholders must share such losses in proportion to their respective holdings. The minority shareholders' share of such losses should be deducted from the amount of Minority Interest. But the holding company's share of such losses should be treated as capital loss and debited to Goodwill account. While preparing the Consolidated Balance Sheet, this Goodwill Account should be shown as an asset.

**9. PROFIT ON REVALUATION OF ASSETS OF SUBSIDIARY COMPANY**

If there is any profit resulting from the revaluation of assets of the subsidiary company whether before or after the date of acquisition of shares by the holding company, the same must be shared both by the holding company and the minority shareholders in proportion to their respective holdings. The minority shareholders' share of such profit should be added to the Minority interest. But the holding company's share should be treated as capital profits and dealt with like pre-acquisitions profit and reserve.

Further, adjustment for depreciation on the increases or decreases in the value of assets would be made in the profit and loss account of the subsidiary. For appreciation in the value of assets, depreciation charge would be increased proportionately and the same would be deducted from the revenue profits of the subsidiary company. On the other hand, for revaluation loss due to decrease in the value of assets, excess depreciation provision should be written back.

**10. LOSS ON REVALUATION OF ASSETS OF SUBSIDIARY COMPANY**

If there is any loss resulting from the revaluation of the assets of the subsidiary company as on the date of acquisition of shares by the holding company the same must be shared both by the holding company and the minority shareholders in proportion to their respective holdings. The minority shareholders' share of such loss should be deducted from the amount of Minority interest. But, the holding company's share of such loss should be treated as capital loss and dealt with like pre-acquisition losses. But, if such loss occurs after the date of acquisition of shares by the holding company the same should be treated as ordinary loss.

### 11. GOODWILL OR COST CONTROL

In actual practice, it rarely happens that the cost of acquisition of shares in the subsidiary company agrees exactly with intrinsic value of the shares (i.e. the net assets of the subsidiary company) on the date of acquisition. If the price paid by the holding company for the shares acquired in the subsidiary company is more than the intrinsic value of the shares acquired, the difference should be treated as Cost of Control or Goodwill. If on the other hand, the price paid by the holding company for the shares acquired in the subsidiary company is less than the intrinsic value of the shares acquired, the difference should be treated as capital profits and credited to Capital Reserve. It should be noted that while computing the intrinsic value of the shares as on the date of acquisition of control, all profits and losses upto that date, have to be taken into account.

While preparing the consolidated balance sheet, such Goodwill or Capital Reserve, whatever may be the case, must be shown in the Balance Sheet.

#### Illustration 4

The Balance Sheets of H Ltd. and S Ltd. as on 31<sup>st</sup> March 2011 are given below:

<i>Liabilities</i>	<i>H Ltd.</i>	<i>S Ltd.</i>	<i>Assets</i>	<i>H Ltd.</i>	<i>S Ltd.</i>
	₹	₹		₹	₹
<i>Share Capital:</i>			Sundry Assets	5,91,000	3,18,000
Shares of			Investments:		
₹ 100 each	6,00,000	2,00,000	1,600 shares of		
General Reserve	60,000	40,000	₹ 100 each	2,24,000	–
Profit & Loss Account	80,000	30,000			
Creditors	<u>75,000</u>	<u>48,000</u>			
	<u>8,15,000</u>	<u>3,18,000</u>		<u>8,15,000</u>	<u>3,18,000</u>

H Ltd. acquired the shares in S Ltd. on 31<sup>st</sup> March 2,011. The plant worth book value of ₹ 60,000 included in sundry assets of S Ltd. was re-valued at ₹ 50,000 on this date.

Prepare the consolidated balance sheets of H Ltd. and S Ltd. as on that date.

#### Solution:

##### 1. Pre-acquisition profits and reserves\*

General Reserve as on 31.3.2011		₹ 40,000
Profit and Loss Account balance as on 31.3.2011		<u>30,000</u>
Total accumulated profits upto 30.6.2008		<u>70,000</u>
Holding Company's share	4/5 x 70,000	56,000
Minority Interest	1/5 x 70,000	<u>14,000</u>

**2. Loss on revaluation of plant as on 31.3.2011\***

Loss on revaluation of plant ₹(60,000 – 50,000)	<u>10,000</u>
Holding Company's share 4/5 x 10,000	8,000
minority Interest 1/5 x 10,000	<u>2,000</u>

**3. Minority Interest**

Paid-up value of 400 shares	40,000
Add: 1/5th share of pre-acquisition profits and reserves	<u>14,000</u>
	54,000
Less: 1/5th shares of loss on revaluation of plant	<u>2,000</u>
Net amount due to minority shareholders	<u>52,000</u>

**4. Goodwill or Cost of Control**

Intrinsic value of shares held in S Ltd.:

Paid-up value of 1,600 shares	1,60,000
Add: 4/5th share of pre-acquisition profits and reserves	<u>56,000</u>
	2,16,000
Less: 4/5th share of loss on revaluation of plant	<u>8,000</u>
Intrinsic value of 1,600 shares	<u>2,08,000</u>
Price paid for 1,600 shares	2,24,000
Cost of Control or Goodwill = ₹(2,24,000 – 2,08,000)	<u>16,000</u>

**Consolidated Balance Sheet of H Ltd. and its Subsidiary S Ltd.  
as at 31<sup>st</sup> March 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		Cost of Control or	
Shares of ₹ 100 each	6,00,000	Goodwill	16,000
Minority Interest	52,000	Sundry Assets:	
General Reserve	60,000	H Ltd.	5,91,000
Profit and Loss Account	80,000	S Ltd.	<u>3,08,000</u>
Creditors:			8,99,000
H Ltd.	75,000		
S Ltd.	<u>48,000</u>		
	<u>1,23,000</u>		
	9,15,000		<u>9,15,000</u>

**12. POST-ACQUISITION PROFITS OR LOSSES**

Profits earned or losses incurred by the subsidiary company after the date of acquisition of its shares by the holding company are called post-acquisition profits or losses. Both the holding company and the minority shareholders should share such profits or losses in proportion to their respective holdings. The minority shareholders' share in such profits should be added to the amount of minority interest while their

\* Instead of being dealt with separately the two can be merged together and dealt with as one item.

share in such losses should be deducted. So far as the minority shareholders are concerned, there is no difference between the pre-acquisition profits or losses and the post-acquisition profits or losses. But, so far as the holding company is concerned, it makes a lot of difference. The holding company's share of such profits or losses should be treated as revenue profits or losses and as such credited or debited to its profit and loss account.

### 13. INTER-COMPANY UNREALISED PROFITS INCLUDED IN UNSOLD GOODS

If goods are sold by one company to the other (i.e., by the holding company to its subsidiary or *vice-versa*) at a profit and a part of it remains unsold at the end of the year, the unrealised profit and such goods remaining unsold must be provided for. But it is important to note here that the minority shareholders will not be affected in any way. Such unrealised profit has to be eliminated from the consolidated balance sheet in the following manner:

- (i) The unrealised profits should be deducted from the current revenue profits of the company which sold the goods.
- (ii) Again, the same should be deducted from the value of stock-in-trade of the company concerned.

### 14. INTER-COMPANY TRANSACTIONS

The holding company and the subsidiary company may have a number of inter-company transactions in any one or more of the following matters:

- (i) Loans advanced by the holding company to the subsidiary company or vice versa. This appears as an asset in the balance sheet of the company which gives loan and as a liability in the balance sheet of the company which takes the loan.

If S Ltd. has taken a loan of ₹ 20,000 from H Ltd. then S Ltd.'s balance sheet shows a liability of ₹ 20,000, while H Ltd.'s balance sheet shows an asset of ₹ 20,000.

- (ii) Bills of exchange given by one company and received by another company appears as bills payable in the balance sheet of the accepting company and as bills receivable in the balance sheet of the drawer company. If H Ltd. draws a bill of ₹ 10,000 on S Ltd. then H Ltd.'s books will show bills receivable ₹ 10,000 while S Ltd.'s books will show bills payable ₹ 10,000.
- (iii) Transactions relating to sale and purchase of goods on credit similarly appears as debtors in the balance sheet of the company selling goods and as creditors in the balance sheet of the company purchasing the goods.
- (iv) Debentures issued by one company may be held by the other. If S Ltd. issues debentures of ₹ 50,000 which are held by H Ltd. then S Ltd.'s books will show a liability of ₹ 50,000 while H Ltd. books will show an asset of ₹ 50,000.

All the above inter-company transactions have to be eliminated while preparing the consolidated balance sheet. This can be done by deducting the inter company transactions from the respective items on both sides of the balance sheet.

### 15. CONTINGENT LIABILITIES

If the contingent liabilities relate to the outsiders they must be shown by way of a footnote in the consolidated balance sheet. But a contingent liability in respect of a transaction between holding and subsidiary companies (internal contingent liability) will disappear from the foot note as they appear as actual liability in the consolidated balance sheet.

#### Illustration 5

From the following balance sheets of H Ltd. and its subsidiary S Ltd. drawn up at 31st March, 2011, prepare a consolidated balance sheet as at that date, having regard to the following:

- (i) Reserves and Profit and Loss Account (Cr.) of S Ltd. stood at ₹ 25,000 and ₹ 15,000 respectively on the date acquisition of its 80% shares by H Ltd.
- (ii) Machinery (book-value ₹ 1,00,000) and Furniture (Book-value ₹ 20,000) of S Ltd. were revalued at ₹ 1,50,000 and ₹ 15,000 respectively for the purpose of fixing the price of its shares; book values of other assets remaining unchanged. These values are to be considered for consolidation purposes.

#### Balance Sheet of H Ltd. as on 31st March, 2011

<i>Liabilities</i>	<i>H Ltd.</i>	<i>S Ltd.</i>	<i>Assets</i>	<i>H Ltd.</i>	<i>S Ltd.</i>
	₹	₹		₹	₹
Share Capital:			Machinery	3,00,000	90,000
Shares of			Furniture	50,000	17,000
₹ 100 each	5,00,000	1,00,000	Other assets	4,40,000	1,43,000
Reserve	2,00,000	75,000	Shares in S Ltd.		
Profit and Loss			800 shares at	1,60,000	–
Account	1,00,000	25,000	₹ 200 each		
Creditors	1,50,000	50,000			
	<u>9,50,000</u>	<u>2,50,000</u>		<u>9,50,000</u>	<u>2,50,000</u>

#### Solution:

#### Working Notes:

##### 1. Pre-acquisition profits and reserves of S Ltd.

Reserve		₹ 25,000
Profit and Loss Account		<u>15,000</u>
		<u>40,000</u>
H Ltd.'s	= 4/5 x 40,000	32,000
Minority Interest	= 1/5 x 40,000	<u>8,000</u>

**2. Profit on revaluation of assets of S Ltd.**

Profit on Machinery	₹ (1,50,000 – 1,00,000)	50,000
Less: Loss on Furniture	₹ (20,000 – 15,000)	<u>5,000</u>
Net profit on revaluation		<u>45,000</u>
H Ltd.'s share	4/5 x 45,000	36,000
Minority Interest	1/5 x 45,000	<u>9,000</u>

**3. Post-acquisition reserve of S Ltd.**

Post-acquisition reserves	= ₹ (75,000 - 25,000)	<u>50,000</u>
H Ltd.'s share	4/5 x 50,000	40,000
Minority Interest	1/5 x 50,000	<u>10,000</u>

**4. Post-acquisition profits of S Ltd.**

Post-acquisition profits	₹ (25,000 – 15,000)	10,000
Add: Excess depreciation charged on furniture @ 15% on ₹ 5,000 i.e. (20,000 – 15,000)		<u>750</u>
		10,750
Less: Under-depreciation on machinery @ 10% on ₹ 50,000 i.e. (1,50,000 – 1,00,000)		<u>5,000</u>
Adjusted post-acquisition profits		<u>5,750</u>
H Ltd.'s share	4/5 x 5,750	4,600
Minority Interest	1/5 x 5,750	<u>1,150</u>

Note: Rate of depreciation has been ascertained as follows:

$$\text{Machinery} = \frac{10,000^*}{1,00,000} \times 100 = 10\%$$

$$\text{Furniture} = \frac{3,000^*}{20,000} \times 100 = 15\%$$

**5. Minority Interest**

Paid-up value of (1,000 – 800) 200 shares held by outsiders, i.e., 200 x ₹ 100	20,000
Add: 1/5th share of pre-acquisition profits and reserves	8,000
— 1/5th share of profit on revaluation	9,000
— 1/5th share of post-acquisition reserves	10,000
— 1/5th share of post-acquisition profit	<u>1,150</u>
	<u>48,150</u>

**6. Cost of Control or Goodwill**

Paid-up value of 800 shares held by H Ltd. i.e., 800 x ₹ 100	80,000
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\* The difference between the book figure stated in point (ii) of the problem and the figures in the balance sheet of S Ltd.

Add: 4/5th share of pre-acquisition profits and reserves	32,000
4/5th share of profit on revaluation	<u>36,000</u>
Intrinsic value of the shares on the date of acquisition	<u>1,48,000</u>
Price paid by H Ltd. for 800 shares	1,60,000
Less: Intrinsic value of the shares	<u>1,48,000</u>
Cost of Control or Goodwill	<u>12,000</u>

**Consolidated Balance Sheet of H Ltd. and its Subsidiary S Ltd.  
as at 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Share Capital:		Goodwill	12,000
Shares of ₹ 100 each	5,00,000	Machinery:	
Minority Interest	48,150	H Ltd.	3,00,000
Reserves	2,00,000	S Ltd.	1,00,000
Add: 4/5th share of S Ltd.'s post-acquisition reserves	<u>40,000</u> 2,40,000	Add: Appreciation	<u>50,000</u>
Profit and Loss Account	1,00,000	Less: Depreciation	<u>15,000</u> <u>1,35,000</u> 4,35,000
Add: 4/5th share of S Ltd.'s Post-acquisition profits	<u>4,600</u> 1,04,600	Furniture:	
Creditors:		H Ltd.	50,000
H Ltd.	1,50,000	S Ltd.	20,000
S Ltd.	<u>50,000</u> 2,00,000	Less: Decrease in value	<u>5,000</u>
			15,000
		Less: Depreciation	<u>2,250</u> <u>12,750</u> 62,750
		Other Assets:	
		H Ltd.	4,40,000
		S Ltd.	<u>1,43,000</u> <u>5,83,000</u>
	<u>10,92,750</u>		<u>10,92,750</u>

### 16. PREFERENCE SHARES IN SUBSIDIARY COMPANY

Preference share capital in subsidiary company should be shown alongwith minority interest in the consolidated balance sheet. However, if a part of the nominal value of non-participating preference share capital of the subsidiary is held by the holding company, it should be adjusted in cost of control against the cost of

investment in preference shares. The balance of the preference share capital held by the outsiders should be included in minority interest.

### 17. BONUS SHARES

The issue of bonus shares by the subsidiary company will increase the number of shares held by the holding company as well as the minority shareholders. Issue of bonus shares may or may not affect the cost of control depending upon whether such shares are issued out of capital profits or revenue profits.

- (a) *Issue of bonus shares out of capital profit (Pre-acquisition profits):* In this case there will be no effect on accounting treatment because while calculating the cost of control the share of the holding company in pre-acquisition profit is reduced because of capitalisation of profit and the paid-up value of shares held in subsidiary company is increased. Hence there is no effect on cost of control when bonus shares are issued from pre-acquisition profit.
- (b) *Issue of bonus shares out of post acquisition profit:* In this case, a part of the revenue profits will get capitalised resulting in decrease of cost of control or increase in capital reserve.

### 18. TREATMENT OF DIVIDEND RECEIVED FROM SUBSIDIARIES

When a subsidiary company pays a dividend, the holding company will naturally receive its due share. On receipt, the holding company will naturally debit the bank account; the question is which account is to be credited. The rule in this respect is that dividend received out of pre-acquisition profits or that relating to pre-acquisition period should be treated as capital receipt and credited to Investment Account. Only the dividend out of post-acquisition profits or relating to the period after acquisition should be treated as revenue income and credited to the Profit and Loss Account. This point will be clarified by the following illustrations (Calendar year is taken as accounting year):

(1) H Ltd. acquired 80% of the shares of S Ltd. whose capital consisted of 10,000 shares of ₹ 100 each, on 1st April, 2006. In June, 2009 S Ltd. paid a dividend @ ₹20 per share for 2008 and in June, 2010 it paid a dividend of ₹ 25 per share for 2009. The dividend paid in 2009 is for 2008 and is therefore, a capital receipt. The entry to be passed by H Ltd. is:

Bank	Dr.	₹ 1,60,000	₹ 1,60,000
To Investment in Shares of S Ltd.			

In 2010 the dividend received is for 2009. The dividend upto 1st April, 2009 for 3 months - is capital receipt but that after 1st April, 2009 - for 9 months - is revenue income. The entry that H Ltd. will pass is:

Bank	Dr.	₹ 2,00,000	₹ 50,000
To Investment in Shares of S Ltd.			
To Profit and Loss Account			1,50,000

If H Ltd. paid ₹300 per share for purchasing the shares, i.e. ₹24,00,000 in all after the two entries made above, the investment account will stand at ₹21,90,000, i.e., ₹24,00,000 minus dividends received in 2009 and in 2010 (upto 1st April, 2009)

(2) Huge Ltd. purchased 16,000 shares in S Ltd. on January 1, 2010. The Capital of S Ltd. consisted of 20,000 shares of ₹100 each. The Profit and Loss Account of S Ltd. stated the following:

	₹
Balance b/d on Jan. 1, 2010	2,00,000
Profit for 2010	<u>1,00,000</u>
	3,00,000
Less: Dividend for 2010	<u>2,40,000</u>
Balance c/d	<u>60,000</u>

It is obvious that S Ltd. has paid dividend at ₹12 per share absorbing ₹2,40,000 of profits but since profit for 2010 was only ₹1,00,000, ₹1,40,000, of the dividend was paid out of profits existing on January 1, 2010. Dividend out of this portion of the profit will be treated as capital receipt by the Huge Ltd. The entry to be passed by Huge Ltd. is:

	₹	₹
Bank	Dr.	1,92,000
(2,40,000 x 16/20)		
To Investment in Shares of S Ltd.		1,12,000
(1,40,000 x 16/20)		
To Profit and Loss account		80,000
(1,00,000 x 16/20)		

One should be careful to see that the holding company has correctly treated the dividend received from the subsidiary company. Wrong treatment will mean incorrect consolidation of the balance sheets of the two companies:

### Illustration 6

Following are the balance Sheets of H Ltd. and S Ltd. as at 31st March, 2011.

<i>Liabilities</i>	<i>H Ltd.</i>	<i>S Ltd.</i>	<i>Assets</i>	<i>H Ltd.</i>	<i>S Ltd.</i>
	₹	₹		₹	₹
Share Capital:			Goodwill	40,000	30,000
Shares of ₹100			Land and		
Each	5,00,000	2,00,000	Building	2,00,000	1,30,000
General Reserve			Plant &		
as on 1.4.2007	1,00,000	60,000	Machinery	1,60,000	90,000
Profit and Loss			Debtors	20,000	75,000
Account	1,40,000	90,000	Stock in		
Bills Payable			Trade	1,00,000	90,000
Creditors	80,000	50,000	Shares in		

S Ltd. 1,500 shares (at cost)	240,000	
Cash at Bank	60,000	25,000

<u>8,20,000</u>	<u>4,40,000</u>	<u>8,20,000</u>	<u>4,40,000</u>
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The Profit and Loss Account of S Ltd. showed a credit balance of ₹ 50,000 on 1st April 2010. A dividend of 15% was paid in December 2010 for the year 2009-10. This dividend was credited to Profit and Loss Account by H Ltd.

H Ltd. acquired the shares in S Ltd. on 1st October, 2010.

The Bills Payable of S Ltd. were all issued in favour of H Ltd. which company got the bills discounted.

Included in the Creditors of S Ltd. is ₹ 20,000 for goods supplied by H Ltd. Included in the stock of S Ltd. are goods to the value of ₹ 8,000 which were supplied by H Ltd. at a profit of 33-1/3% on cost.

In arriving at the value of S Ltd. shares, the plant and machinery which then stood in the books at ₹ 1,00,000 on 1.4.2010 was revalued at ₹ 1,50,000. The new value was not incorporated in the books. No changes in these have been made since then.

Prepare the consolidated balance sheet as on that date.

**Solution:**

**Consolidated Balance Sheet of H. Ltd. and  
its Subsidiary S Ltd. as at 31.3.2011**

<i>Liabilities</i>		₹	<i>Assets</i>		₹
Share capital:			Goodwill	70,000	
5000 shares of ₹ 100 each	5,00,000		Less: Capital		
Minority interest	1,00,562		Reserve	<u>60,000</u>	10,000
General Reserve	1,00,000		Land & Building		3,30,000
Profit & Loss A/c	1,40,000		Plant & Machinery		
<i>Add: Post-acquisition</i>			H Ltd.	1,60,000	
profit	<u>24,188</u>		S Ltd.	<u>1,42,250</u>	3,02,250
	1,64,188		Stock		1,88,000
<i>Less: Pre-acquisition</i>			Sundry debtors		75,000
dividend	<u>22,500</u>		Cash at Bank		85,000
	1,41,688				
<i>Less: Unrealised profit</i>	<u>2,000</u>	1,39,688			
Bills payable	40,000				
Sundry creditors	<u>1,10,000</u>				
	<u>9,90,250</u>				<u>9,90,250</u>

**Working Notes:***(1) Pre-acquisition Profits and Reserves of S Ltd.*

		₹
General Reserve as on 1.4.2010		60,000
Profit and Loss Account as on 1.4.2010	50,000	
Add: Profit for 6 months upto 30.9.2010		
i.e., 1/2 of ₹(90,000 + 30,000 - 50,000)	<u>35,000</u>	
	85,000	
Less: Dividend for 2009-10 @15% on ₹2,00,000	<u>30,000</u>	<u>55,000</u>
		<u>1,15,000</u>
H Ltd.'s share	3/4th of 1,15,000	86,250
Minority Interest	1/4th of 1,15,000	<u>28,750</u>

*(2) Profit on Revaluation of Plant and Machinery*

		₹
Book value of plant and machinery as on 1.4.2010		1,00,000
Less: Book value on 31.3.2011		<u>90,000</u>
Depreciation for full year		<u>10,000</u>

Rate of depreciation – 10%

Depreciation for 6 months (upto 30.9.2010)	5,000
Book value on 1.10.2007 ₹1,00,000 – 5,000	95,000
Profit on revaluation ₹1,50,000 – 95,000	<u>55,000</u>
H. Ltd.'s share (3/4th)	41,250
Minority Interest (1/4th)	<u>13,750</u>

*(3) Revised Book value of Plant and Machinery on 31.3.2011*

Book value on 31.3.2011	90,000
Appreciation	<u>55,000</u>
	1,45,000
Less: Depreciation on ₹55,000 for 6 months @ 10%	<u>2,750</u>
Revised value on 31.3.2011	<u>1,42,250</u>

*(4) Post Acquisition Profit*

Balance as on 31.3.2011	90,000
Add: Dividend paid	<u>30,000</u>
	1,20,000
Less: Balance as on 1.4.2010	<u>50,000</u>
Profit earned during the year	70,000
Less: Pre-acquisition profits (6 months)	<u>35,000</u>
Post acquisition profit	35,000

Less: Depreciation in respect of increase in value of plant and machinery	<u>2,750</u>
	<u>32,250</u>
H. Ltd.'s share (3/4th)	24,188
Minority Interest (1/4th)	<u>8,062</u>
<i>(5) Minority Interest</i>	
Paid-up value of 500 shares	50,000
Share of pre-acquisition profits	28,750
Profit on revaluation of plant and machinery	13,750
Share of post acquisition profits	<u>8,062</u>
	<u>1,00,562</u>
<i>(6) Cost of Control/Goodwill</i>	
Paid-up value of shares	1,50,000
Share of pre-acquisition profit	86,250
Profit on revaluation of plant and machinery	<u>41,250</u>
Intrinsic value on 1.10.2010	2,77,500
Less: Price paid (₹ 2,40,000 – 22,500*)	<u>2,17,500</u>
Capital reserve	<u>60,000</u>
<i>(7) Unrealised profit on stock of S Ltd.</i>	
$= ₹ 8,000 \times \frac{1}{4} =$	<u>2,000</u>

**Illustration 7****Balance Sheet as on 31st March, 2011**

<i>Liabilities</i>	<i>H Ltd.</i> ₹	<i>S Ltd.</i> ₹
Share capital:		
6% preference shares of ₹ 10 each	—	1,60,000
Equity shares of ₹ 10 each	6,00,000	2,00,000
General reserve	1,00,000	80,000
Profit and loss account	2,00,000	90,000
6% Debentures of ₹ 10 each	—	40,000
Proposed dividend:		
on equity shares	60,000	20,000
on preference shares	—	9,600
Debentures interest accrued	—	2,400
Sundry creditors	<u>2,94,000</u>	<u>1,25,000</u>
	<u>12,54,000</u>	<u>7,27,000</u>

\* Dividend for 2009-10 received in 2010-11.

**Assets**

Fixed assets	5,00,000	4,40,000
15,000 equity shares in S Ltd.	3,30,000	—
12,000 preference shares in S Ltd.	1,20,000	—
1,000 6% debentures in S Ltd.	10,000	—
Current assets	<u>2,94,000</u>	<u>2,87,000</u>
	<u>12,54,000</u>	<u>7,27,000</u>

Other information is as under:

- (i) The general reserve of S Ltd. as on 1.4.2010 was ₹ 80,000.
- (ii) H Ltd. acquired the shares in S Ltd. on 1.4.2010
- (iii) The balance of profit and loss account of S Ltd. is made up as follows:

	₹
Balance as on 1.4.2010	56,000
Net profit for the year ended 31.3.2011	<u>63,600</u>
	1,19,600
Less: Provision for proposed dividend	<u>29,600</u>
	<u>90,000</u>

- (iv) The balance of profit and loss account of S Ltd. as on 1.4.2010 is after providing for preference dividend of ₹9,600 and proposed dividend of ₹10,000 both of which were subsequently paid and credited to profit and loss account of H Ltd.
- (v) No entries have been made in the books of H Ltd. for debentures interest due from or proposed dividend of S Ltd. for the year ended on 31.3.2011.
- (vi) S Ltd. has issued fully paid bonus shares of ₹40,000 on 31.3.2011 among the existing shareholders by drawing upon the general reserve. The transaction has not been given effect to in the books of S Ltd.

You are required to prepare the consolidated balance sheet of H Ltd. with its subsidiary S Ltd. as on 31st March, 2011.

**Solution:**

**H Ltd.'s Consolidated Balance Sheet with its Subsidiary S Ltd.  
as on 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Equity Shares of ₹10 each	6,00,000	Goodwill	63,300
Minority Interest	1,39,900	Other Fixed Assets:	
<i>Reserves and Surplus:</i>		H Ltd.	5,00,000
General Reserve	1,00,000	S Ltd.	<u>4,40,000</u>
			9,40,000

Profit and Loss A/c	2,00,000		<i>Investments:</i>		–
Add: Deb. Interest	600		<i>Current Assets, Loans</i>		
Profit from			<i>and Advances:</i>		
S Ltd.	<u>47,700</u>		H Ltd.	2,94,000	
	2,48,300		S Ltd.	<u>2,87,000</u>	5,81,000
Less: Dividend			<i>A. Current Assets:</i>		
from S Ltd.			Deb. Interest due	600	
for 2006-07	<u>14,700</u>	2,33,600	Less: Mutual		
			obligation	<u>600</u>	–
			<i>B. Loans and Advances</i>		–
<i>Secured Loans:</i>					
6% Debentures	40,000				
Less: Mutual					
Obligation	<u>10,000</u>	30,000			
Debenture Interest					
outstanding		1,800			
<i>Current Liabilities</i>					
<i>and Provisions:</i>					
<i>A. Current Liabilities</i>					
Creditors					
H Ltd.	2,94,000				
S Ltd.	<u>1,25,000</u>	4,19,000			
<i>B. Provisions</i>					
Proposed Dividend (H Ltd.)	<u>60,000</u>				
		<u>15,84,300</u>			<u>15,84,300</u>

**Working Notes:**

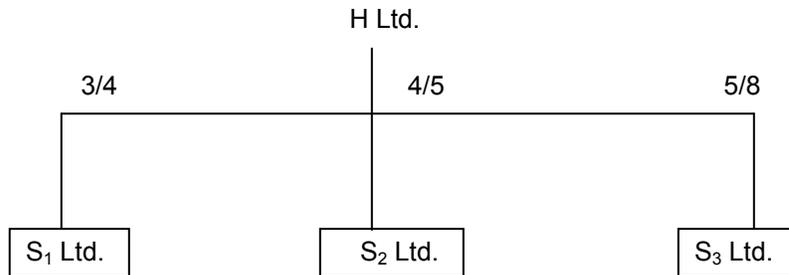
<i>1. Capital Profit</i>		₹
General Reserve		80,000
Profit and Loss A/c		<u>56,000</u>
		1,36,000
Less: Bonus Shares		<u>40,000</u>
		96,000
Holding Company (3/4)		72,000
Minority Interest (1/4)		<u>24,000</u>
<i>2. Revenue Profit</i>		
Profit and Loss A/c		90,000
Less: Balance on 1.4.2010		<u>56,000</u>

		34,000
<i>Add:</i> Proposed dividend for current year i.e. for the period after acquisition of shares		<u>29,600</u>
		63,300
Holding Company (3/4)		47,700
Minority Interest (1/4)		<u>15,900</u>
<i>3. Bonus Shares</i>		<u>40,000</u>
Holding Company (3/4)		30,000
Minority Interest (1/4)		<u>10,000</u>
<i>4. Goodwill/Cost of Control</i>		
Cost of shares acquired:		
Equity shares		3,30,000
Preference shares		<u>1,20,000</u>
		4,50,000
<i>Less:</i> Dividend for 2009-10		
Equity (10,000 x 3/4)	7,500	
Preference (9,600 x 3/4)	<u>7,200</u>	<u>14,700</u>
		4,35,300
<i>Less:</i> Paid-up value of shares acquired:		
Equity shares	1,50,000	
Preference shares	1,20,000	
Capital profit	72,000	
Bonus shares (equity)	<u>30,000</u>	<u>3,72,000</u>
Goodwill		<u>63,300</u>
<i>5. Minority Interest</i>		
Share capital (Equity)		50,000
Bonus shares (Equity)		10,000
Preference capital		40,000
Capital profit		24,000
Revenue profit		<u>15,900</u>
		<u>1,39,900</u>

## 19. HOLDING COMPANY CONSISTING OF MORE THAN ONE SUBSIDIARY

A holding company may have a number of subsidiaries without any mutual

holding in between the subsidiaries. The following chart will clearly show the position:



In this case, holding company H Ltd. acquires shares of 3/4th, 4/5th and 5/8th of S<sub>1</sub> Ltd., S<sub>2</sub> Ltd. and S<sub>3</sub> Ltd. respectively and as such the investment account of holding company will show investment in S<sub>1</sub> Ltd., S<sub>2</sub> Ltd. and S<sub>3</sub> Ltd. instead of one in the usual case. The calculation of cost of control, minority interest, elimination mutual indebtedness, unrealised profits on closing stock etc. of each company should be done following the usual principles.

### Illustration 8

(More than one subsidiary company)

Sun Ltd. owns 80% of issued capital of Moon Ltd. and 90% of issued capital of Star Ltd. The following are the balances of all the companies as on 31.3.2011.

	<i>Sun Ltd.</i>	<i>Moon Ltd.</i>	<i>Star Ltd.</i>
	₹	₹	₹
Fixed Assets	1,70,000	10,000	27,000
Less: Provision for Depreciation	<u>70,000</u>	<u>6,000</u>	<u>9,900</u>
	1,00,000	4,000	18,000
Current Assets	2,68,000	50,000	50,000
Investments			
Shares in Moon Ltd.	15,000		
Shares in Star Ltd.	25,000		
Current Accounts:			
Moon Ltd.	20,000		
Star Ltd.	<u>20,000</u>		
	<u>4,48,000</u>	<u>54,000</u>	<u>68,000</u>
Share Capital	3,20,000	20,000	25,000
Current Liabilities	40,000	6,000	10,000
Current Accounts	—	22,000	18,000
Proposed Dividend	20,000	—	2,500
Revenue Reserve	<u>68,000</u>	<u>6,000</u>	<u>12,500</u>
	<u>4,48,000</u>	<u>54,000</u>	<u>68,000</u>

*Additional information:*

1. At the time of acquiring the shares the subsidiaries had the following Revenue Reserves:
 

Moon Ltd.	₹ 6,000
Star Ltd.	₹ 3,000
2. Neither of the subsidiaries has paid any dividend since acquisition of shares.
3. Payment of creditors of Moon Ltd. by Sun Ltd. to the extent of ₹ 2,000 has not been considered in the books of Moon Ltd.
4. A remittance of ₹ 2,000 by Star Ltd. to Sun Ltd. has not yet been adjusted in the books of Sun Ltd.
5. The Stock of Moon Ltd. includes ₹ 3,000 purchased from Sun Ltd. which made 25% profit on cost. Sun Ltd.'s stock includes ₹ 5,000 purchased from Star Ltd.'s which made 20% profit on sales.

Prepare the consolidated Balance Sheet of Sun Ltd. and its subsidiaries — Moon Ltd. and Star Ltd.

**Solution:***Working Notes:**A. Sun Ltd. in Moon Ltd.*

1. Sun Ltd.'s shares in Moon Ltd.  $80/100 = 4/5$ th  
and Minority Interest in Moon Ltd.  $20/100 = 1/5$
2. Pre-acquisition Revenue Reserve in Moon Ltd. (Capital Profits)
 

	₹
Revenue Reserve upto the date of acquisition	6,000
Sun Ltd.'s share $4/5 \times ₹ 6,000$	4,800
Minority interest $1/5 \times ₹ 6,000$	1,200
	6,000
3. Post-acquisition Revenue Reserves in Moon Ltd. (Revenue Profits)
 

Revenue Reserve since the date of acquisition = ₹ (6,000 – 6,000)	Nil
---	-----
4. Minority Interest in Moon Ltd.
 

Paid-up value of shares held by outsiders = $20/100 \times 20,000$	4,000
Add: $1/5$ share of Pre-acquisition Revenue Reserve	1,200
Minority Interest	5,200
5. Cost of Control in Moon Ltd.
 

Intrinsic value of the shares held in Moon Ltd.	
Paid-up value of the shares held $80/200 \times 20,000$	16,000
Add: $4/5$ th share of pre-acquisition Reserve in Moon Ltd.	4,800
Intrinsic value of shares held	20,800
Less: Price paid for the shares held	15,000
Capital Reserve	5,800

6. Unrealised Profit included in Stock of Moon Ltd.  
 Cost for Moon Ltd. is the selling price of Sun Ltd.  
 Let the cost price to Sun Ltd. be ₹100

Profit ₹25

Selling price ₹(100 + 25) = ₹125

Profit on selling price

$$25/125 = 1/5\text{th}$$

Unrealised profit

$$1/5 \times ₹3,000$$

$$= ₹600$$

*B. Sun Ltd. in Star Ltd.*

1. Sun Ltd.'s shares in Star Ltd.  $90/100 = 9/10\text{th}$   
 and Minority Interest in Star Ltd.  $10/100 = 1/10\text{th}$

2. Pre-acquisition Revenue Reserve in Star Ltd. (Capital Profits)

		₹
Revenue Reserve upto the date of acquisition		<u>3,000</u>
Sun Ltd.'s share	$9/10 \times ₹3,000$	2,700
Minority interest	$1/10 \times ₹3,000$	<u>300</u>
		<u>3,000</u>

3. Post-acquisition Revenue Reserves in Star Ltd. (Revenue Profits)

		₹
Revenue Reserve as per Balance Sheet		12,500
Add: Proposed Dividend		<u>2,500</u>
		15,000
Less: Revenue Reserve as on the date of acquisition		<u>3,000</u>
Post-acquisition Revenue Reserve		<u>12,000</u>
Sun Ltd.'s shares	$= 9/10 \times 12,000$	10,800
Minority Interest	$= 1/10 \times 12,000$	<u>1,200</u>
		<u>12,000</u>

4. Minority Interest in Star Ltd.

Paid-up value of shares held by outsiders = $25,000 \times 1/10$	2,500
Add: 1/10th share of Pre-acquisition Revenue Reserve	300
Add: 1/10th share of Post-acquisition Revenue Reserve	<u>1,200</u>
	<u>4,000</u>

5. Cost of Control in Star Ltd.

Intrinsic value of the shares held in Star Ltd.	
Paid-up value of the shares held - $9/10 \times ₹25,000$	22,500
Add: 9/10th share of Pre-acquisition Revenue Reserve in Star Ltd.	<u>2,700</u>
Intrinsic value of shares held	25,200
Less: Price paid for the shares held	<u>25,000</u>
Capital Reserve	<u>200</u>

## C. Sun Ltd.

## 1. Unrealised Profit included in Stock of Sun Ltd.

Sun Ltd. Cost Price is the selling price of Star Ltd.

$$\text{Unrealised profit} = ₹5,000 \times \frac{20}{100} \quad 1,000$$

## 2. Revenue Reserves of Sun Ltd.

Revenue Reserve as per Balance Sheet	68,000
Add: 9/10 share of Post-acquisition Revenue Reserve in Star Ltd.	<u>10,800</u>
	78,800
Less: Unrealised Profit included in Stock ₹(600 + 1,000)	<u>1,600</u>
Adjusted Balance	<u>77,200</u>

**Consolidated Balance Sheet of Sun Ltd. and its Subsidiaries Moon Ltd. and Star Ltd. as at 31st March, 2011**

Liabilities	Amount ₹	Assets	Amount ₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
Authorised Capital	?	Sun Ltd.	1,70,000
Issued, Subscribed and Paid-up Capital:	3,20,000	Moon Ltd.	10,000
Minority Interest		Star Ltd.	<u>27,000</u>
Moon Ltd.	5,200		2,07,000
Star Ltd.	<u>4,000</u>	Less: Provision for Depreciation	<u>85,000</u>
	9,200		1,22,000
<i>Reserves and Surplus:</i>		<i>Investments</i>	—
Capital Reserve on consolidation		<i>Current Assets, Loans and Advances:</i>	
Moon Ltd.	5,800	<i>A. Current Assets:</i>	
Star Ltd.	<u>200</u>	Sun Ltd.	2,68,000
Revenue Reserve	77,200	Moon Ltd.	50,000
Secured Loans	—	Star Ltd.	<u>50,000</u>
Unsecured Loans	—		3,68,000
<i>Current Liabilities and Provision:</i>		Less: Profit included in stock	<u>1,600</u>
<i>A. Current Liabilities</i>			3,66,400
Sun Ltd.	40,000	Add: Cash in transit	<u>2,000</u>
Moon Ltd.	6,000		3,68,400
Less: Payment by		<i>B. Loans and Advances</i>	—
Sun Ltd.	<u>2,000</u>		
Star Ltd.	<u>10,000</u>		
	54,000		
<i>B. Provision</i>			
Suspense Account*	4,000		
Proposed Dividend	<u>20,000</u>		
	<u>4,90,400</u>		<u>4,90,400</u>

\* Unexpected credit by Sun to Moon.

**Note:** Difference in Current Account has been treated as cash-in-transit.

## 20. PREPARATION OF CONSOLIDATED PROFIT AND LOSS ACCOUNT

While preparing the Consolidated Profit and Loss Account of the holding company and its subsidiary, the items appearing in the Profit and Loss Accounts of the holding and subsidiary companies have to be aggregated. But in doing so, the following adjustments have to be made:

- (i) Transfer of goods between the holding company and the subsidiary company should be eliminated both from the purchases and sales appearing in the Consolidated Profit and Loss Account.
- (ii) Stock Reserve for unrealised profit in respect of inter-company transactions should be created by debiting Consolidated Profit and Loss Account and crediting Stock Reserve Account.
- (iii) The share of profits of the subsidiary company arising before the date of acquisition of shares by the holding company that belongs to the holding company will be debited to the Consolidated Profit and Loss Account and credited to Capital Reserve or Goodwill Account as the case may be. In case of loss the entry will be just reversed.
- (iv) The share of profits or losses belonging to the minority shareholders will be respectively credited or debited to Minority Interest Account.
- (v) Dividends received from the subsidiary company by the holding company should be eliminated from both the sides of the Consolidated Profit and Loss Account.
- (vi) Care should be taken to see that both the companies pass entries for interest accrued and outstanding on debentures of the subsidiary company held by the holding company. The debenture interest should be eliminated from both the sides of the Consolidated Profit and Loss Account to the extent to which it relates to the debentures held by the holding company.
- (vii) If the subsidiary company has passed entries for proposed dividend and the holding company has taken credit for its shares of the dividends, the holding company's share should be eliminated from both the sides of the Consolidated Profit and Loss Account. The necessary changes should also be made on both the sides of the Consolidated Balance Sheet. However, if the holding company has not passed entries for proposed dividends of the subsidiary company, the debit in respect of the proposed dividend should be reduced by the holding company's share in such proposed dividend and obviously, the liability in respect of proposed dividend in the Consolidated Balance Sheet should also be reduced.
- (viii) If there are profits and the dividends on cumulative preference shares are in arrears, the arrears of dividends on preference shares held by the Minority shareholders should be debited to the Consolidated Profit and Loss Account and credited to Minority Interest Account.
- (ix) If fixed assets of the subsidiary company are revalued at the time of acquisition of shares by the holding company without any alteration in book-values, the excess or short depreciation should be adjusted by debiting or

crediting the Consolidated Profit and Loss Account and crediting or debiting the respective Asset Account.

- (x) The minority interest will consist of its proportion of total profits after adjustment of excess or short depreciation due to over or under valuation of fixed assets, but before adjusting the proportionate unrealised profit on stock.

It is important to note here that the consolidated Profit and Loss Account has got no concern with the Consolidated Balance Sheet. It is prepared in addition to the Consolidated Balance Sheet to serve the purpose of showing the total profits earned by the group of companies for a particular period.

### Illustration 9

The following are the Profit and Loss Accounts of H Ltd. and S Ltd. for the year ended 31st March, 2011.

	<i>H Ltd.</i>	<i>S Ltd.</i>		<i>H Ltd.</i>	<i>S Ltd.</i>
	₹	₹		₹	₹
To Opening Stock	1,00,000	—	By Sales	8,00,000	6,50,000
To Purchases	5,00,000	4,00,000	By Closing Stock	1,50,000	1,00,000
To Productive Wages	1,50,000	1,00,000			
To Gross Profit c/d	<u>2,00,000</u>	<u>2,50,000</u>			
	<u>9,50,000</u>	<u>7,50,000</u>		<u>9,50,000</u>	<u>7,50,000</u>
To Sundry Expenses	75,000	1,00,000	By Gross Profit b/d	2,00,000	2,50,000
To Debenture Interest	—	6,000	By Debenture Interest	3,000	—
To Provision for Taxation	60,000	70,000			
To Profit c/d	<u>68,000</u>	<u>74,000</u>			
	<u>2,03,000</u>	<u>2,50,000</u>		<u>2,03,000</u>	<u>2,50,000</u>
To Preference Dividend	—	3,000	By Profit b/d	68,000	74,000
To Proposed Dividend	20,000	20,000			
To Tax on Distributed Profit @ 15%*	3,000	3,450			
To Balance c/d	<u>45,000</u>	<u>47,550</u>			
	<u>68,000</u>	<u>74,000</u>		<u>68,000</u>	<u>74,000</u>

You are also given the following additional information:

(1) H Ltd. holds 1,500 equity shares of ₹ 100 each in S Ltd. whose capital consists of 2,000 equity shares of ₹ 100 each and 6% 500 cumulative preference shares of ₹ 100 each. S Ltd. has also issued 6% Debentures of ₹ 1,00,000 out of which H Ltd. holds ₹ 50,000.

(2) The shares in S Ltd. were acquired by H Ltd. on 1st July, 2010 but the debentures were acquired on 1st April, 2010. S Ltd. was incorporated on 1st April, 2010.

\* Assumed at 15%.

(3) During the year S Ltd. sold to H Ltd. goods costing ₹ 50,000 at the selling price of ₹ 75,000. One fourth of the goods manufactured remained unsold on 31st March, 2011. The goods were valued at cost to the holding company for closing stock purposes.

Prepare a consolidated profit and loss account.

**Solution:**

Consolidated Profit and Loss Account of H Ltd. and its Subsidiary S Ltd. for the year ended 31st March, 2011

₹			
To Opening Stock (H Ltd.)	1,00,000	By Sales	
To Purchases		H Ltd.	8,00,000
H Ltd.	5,00,000	S Ltd.	<u>6,50,000</u>
S Ltd.	<u>4,00,000</u>		14,50,000
	9,00,000	Less: Inter	
Less: Inter-co.		Co. sales	<u>75,000</u> 13,75,000
purchases	<u>75,000</u> 8,25,000	By Closing Stock	
To Productive wages		H Ltd.	1,50,000
H Ltd.	1,50,000	S Ltd.	<u>1,00,000</u> 2,50,000
S Ltd.	<u>1,00,000</u> 2,50,000		
To Gross Profit c/d	<u>4,50,000</u>		
	<u>16,25,000</u>		<u>16,25,000</u>
To Sundry Expenses-		By Gross Profit b/d	4,50,000
H Ltd.	75,000	By Debenture	
S Ltd.	<u>1,00,000</u> 1,75,000	Interest	3,000
To Debenture Interest	6,000	Less: Inter Co.	
Less: Inter-co.		transaction	<u>3,000</u> —
transaction	<u>3,000</u> 3,000		
To Provision for Taxation			
H Ltd.	60,000		
S Ltd.	<u>70,000</u> 1,30,000		
To Stock Reserve	6,250		
To Profit c/d	<u>1,35,700</u>		
	<u>4,50,000</u>		<u>4,50,000</u>
To Proposed Dividend		By Profit b/d	1,35,700
H Ltd.	20,000		
S Ltd.	<u>20,000</u>		
	40,000		
Less: Dividend of			
S due to H Ltd.	<u>15,000</u> 25,000		

To Preference Dividend	3,000	
To Tax on Distributed Profit	6,450	
To Capital Reserve	13,229	
To Share of Minority (Interest 1/4 of 47,550)	11,888	
To Balance c/d	<u>76,133</u>	
	<u>1,35,700</u>	<u>1,35,700</u>

**Working Notes:**

1. Capital Reserve has been arrived at as follows:

Profit of S Ltd. after preference dividend and tax on distributed profit thereof:

= ₹(74,000 – 3,450)

= ₹70,550

Pre-acquisition Profit, i.e., Profit upto 1st July, 2007

=  $1/4 \times ₹70,550 = ₹17,638$

H Ltd.'s Share of Pre-acquisition Profits

=  $3/4 \times ₹17,638$

= ₹13,229

2. Stock Reserve has been arrived at as follows:

Total profits made by S Ltd. on goods sold to H Ltd.

= ₹(75,000 – 50,000) = ₹25,000

1/4th of the goods remained unsold. Hence, profits on 1/4th goods

$1/4 \times ₹25,000 = ₹6,250$

3. Debenture Interest paid by S Ltd. and received by H Ltd. amounting ₹3,000 has been eliminated from both sides.
4. Out of the proposed dividend of S Ltd. 3/4th of ₹20,000, i.e., ₹15,000 belong to H Ltd. and as such the same has been eliminated.

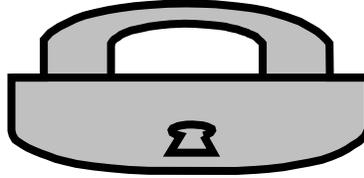
**LESSON ROUND UP**

- A holding company is one which acquires all or a majority of the equity shares of any other company called subsidiary company in order to have control over the subsidiary company.
- Section 212 of the Companies Act, 1956 requires that the balance sheet of a holding company must attach the documents in respect each subsidiary company as regards; a copy of the balance sheet, a copy of its profit and loss account, a

copy of the report of the Board of directors, a copy of the report of its auditors, a statement of the holding company's interest and profit in the subsidiary, a statement regarding changes in interest, assets and liabilities in-between the period from the date of closing the accounts of subsidiary upto the date of closing of the holding company when the two dates do not coincide; and if the Board of directors of the holding company for any reason is unable to obtain information about profits of the subsidiary, report in writing to that effect.

- Consolidation of balance sheet and profit and loss account implies preparation of a single balance sheet and profit and loss account of the holding company and its subsidiaries by aggregating all items of assets, liabilities, incomes, expenses, etc., of the holding company and its subsidiaries.
- Investment in shares of subsidiary company represents the ownership of the holding company in the equity or net assets of the subsidiary company.
- Minority interest is *equal to* the paid-up value of shares held by minority shareholders *plus* proportionate share of the company's profits and reserves *plus* proportionate shares of profits on revaluation of assets of the company *minus* proportionate share of company's losses *minus* proportionate share of loss on revaluation of assets of the company.
- Accumulated profits and reserves which appear in the balance sheet of the subsidiary company up to the date of acquisition of its shares by the holding company are called pre-acquisition profits and reserves.
- Accumulated losses of the subsidiary company upto the date of acquisition of shares by the holding company are called pre-acquisition losses.
- If the price paid by the holding company for the shares acquired in the subsidiary company is more than the intrinsic value of the shares acquired, the difference is treated as cost of control or goodwill.
- If the price paid by the holding company for the shares acquired in the subsidiary company is less than the intrinsic value of the shares acquired, the difference is treated as capital profits and credited to capital reserve.
- Profits earned or losses incurred by the subsidiary company after the date of acquisition of its shares by the holding company are called post-acquisition profits or losses.
- When goods are sold by one company to the other at a profit and a part of it remains unsold at the end of the year, there arise the unrealised profit on such goods remaining unsold.
- The holding company and the subsidiary company may have a number of inter-company transactions which may be eliminated while preparing the consolidated balance sheet.
- Contingent liabilities relate to the outsiders must be shown by way of a footnote in the consolidated balance sheet. But a contingent liability in respect of a transaction between holding and subsidiary companies will disappear from the foot note.
- Issue of bonus shares by the subsidiary company will increase the number of shares held by the holding company as well as the minority shareholders. Issue of bonus shares may or may not affect the cost of control depending upon whether such shares are issued out of capital profits or revenue profits.

**SELF TEST QUESTIONS**



1. On 1st July, 2010 Mighty Ltd. acquired 7,500 shares of ₹100 each in Meck Ltd. at a cost of ₹160 per share. The total number of shares in Meck Ltd. is 10,000. In August, 2010. Meck paid a dividend of ₹10 per share for the year ending 31st March, 2010. In September, 2010 Mighty sold 500 shares in Meck Ltd. @ ₹155. At what figure will be the Investment Account now stand in the books of Mighty Ltd.?

[Ans.: 10,50,000]

2. **Balance Sheet of Harry Co. Ltd. as on 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Capital	1,00,000	Goodwill	20,000
General Reserve	34,000	Land and Buildings	76,000
Profit and Loss A/c	11,100	Investments*	28,800
Bills Payable	41,000	Stock	52,000
Sundry Creditors	63,900	Sundry Debtors and Advances (including loan to Suman Ltd.: ₹1000)	58,000
		Cash and bank	15,200
	<u>2,50,000</u>		<u>2,50,000</u>

\* The investment consists of 2,400 shares of ₹10 each fully paid in its subsidiary Suman Ltd. which was acquired on 1st July, 2010.

**Balance Sheet of Suman Ltd. as on 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Capital (d)	30,000	Goodwill	4,400
General Reserve	5,000	Plant and Machinery (a)	29,000
Profit and Loss A/c (e)	4,400	Stock	6,000
Loan	21,000	Sundry Debtors	12,500
Sundry Creditors	28,400	Bills Receivable (b)	30,000
		Cash and Bank (c)	6,900
	<u>88,000</u>		<u>88,000</u>

- (a) On 1st April, 2010 the plant and machinery were revalued at ₹32,000

which should be taken in the consolidated balance sheet. Ignore depreciation. There were no additions or deletions to plant during the year.

- (b) Total bills receivable were ₹41,000 (all accepted by Harry Co. Ltd.) of which bills of ₹11,000 had been discounted with the banker and yet to be matured.
- (c) Cash and bank balances were arrived at after sending a cheque for ₹1,000 to Harry Co. Ltd., on account of repayment of loan.
- (d) Capital account of Suman Ltd. consists of 3,000 ordinary shares of ₹10 each.
- (e) Balances as on 1st April, 2010
- |                     |        |
|---------------------|--------|
| Profit and Loss A/c | ₹1,200 |
| General Reserve     | ₹4,000 |

Prepare a consolidated balance sheet as on 31st March, 2011. Workings will be part of your answer.

[Ans.: Total of Balance Sheet ₹2,80,400]

3. On 1st May, 2010 H Ltd. purchased 4,000 shares in S Ltd. at ₹175 per share. At the end of 2010 the balance sheet of S Ltd. stood as follows:

	₹		₹
Share Capital (fully paid shares of ₹ 100 each)	5,00,000	Goodwill	50,000
Reserve (as on 1.1.2010)	2,00,000	Fixed Assets (Cost ₹10,00,000)	8,00,000
Profit and Loss A/c	1,50,000	Current Assets	3,00,000
10% Debentures	1,00,000		
Sundry Creditors	2,00,000		
	<u>11,50,000</u>		<u>11,50,000</u>

The opening balance in the Profit and Loss Account was ₹80,000 out of which dividend amounting to ₹50,000 was paid in June, 2010. Ascertain the minority interest and cost of control (or capital reserve).

[Ans.: Minority interest: ₹1,70,000; Cost of Control: ₹44,000]

4. A subsidiary sold goods to the holding company on the basis of cost plus 25%. At the end of the year the stock in trade of the holding company included such goods amounting to ₹80,000. 25% of the shares of the subsidiary are held by outsiders. What is the amount of stock reserve required?

[Ans.: ₹12,000]

5. On 1<sup>st</sup> April, 2010, Broad Ltd. acquired 20 lakh fully paid equity shares of ₹10 each in Ways Ltd. for ₹3.75 crore. The balance sheets of two companies as on 31<sup>st</sup> March, 2011 are given below:

<i>Liabilities</i>	<i>(Rupees in Lakhs)</i>	
	<i>Broad Ltd.</i>	<i>Ways Ltd.</i>
Equity share capital of ₹10 each, fully paid	500	250
Securities premium	50	—
General reserve	60	140
Profit and loss account	230	75
Creditors	95	85
Proposed dividends	<u>75</u>	<u>—</u>
	<u>1,010</u>	<u>550</u>
<i>Assets</i>		
Land and buildings	90	80
Plant and machinery	210	135
Furniture and fixtures	100	25
Shares in Ways Ltd.	375	—
Stock	110	145
Debtors	75	85
Cash at bank	50	70
Preliminary expenses	<u>—</u>	<u>10</u>
	<u>1,010</u>	<u>550</u>

Additional information is as under :

- (i) The balances of general reserve and profit and loss account on the date of acquisition of shares by Broad Ltd. were ₹100 lakh and ₹15 lakh respectively,
- (ii) In July 2010, Ways Ltd. distributed 10% dividend for the year 2009-10. Broad Ltd. credited the entire amount of dividend received to its profit and loss account.
- (iii) On 31<sup>st</sup> March, 2011, Ways Ltd. owed ₹30 lakh to Broad Ltd. for goods purchased from it, which sold goods at cost plus 25%. Goods costing ₹15 lakh to Ways Ltd. were still lying unsold with Ways Ltd. on 31<sup>st</sup> March, 2011.
- (iv) No part of preliminary expenses has been written off during the year.

You are required to prepare the consolidated balance sheet of Broad Ltd. and its subsidiary Ways Ltd. as on 31<sup>st</sup> March, 2011.

6. From the following balance sheets of Vipul Ltd. and its subsidiary Vedika Ltd. as on 31<sup>st</sup> March, 2011 and the additional information provided thereafter, prepare the consolidated balance sheet of the two companies as on that date:

<i>Liabilities</i>	<i>Vipul Ltd.</i> (₹)	<i>Vedika Ltd.</i> (₹)
Share capital:		
Shares of ₹10 each fully paid	10,00,000	2,00,000
General reserve	3,10,000	—

Profit and loss account	1,50,000	40,000
Creditors	<u>2,30,000</u>	<u>69,000</u>
	<u>16,90,000</u>	<u>3,09,000</u>
<i>Assets</i>		
Fixed assets	11,62,000	1,80,000
70% Shares of Vedika Ltd. (at cost)	1,42,000	—
Current assets	3,86,000	1,24,000
Discount on issue of shares	<u>—</u>	<u>5,000</u>
	<u>16,90,000</u>	<u>3,09,000</u>

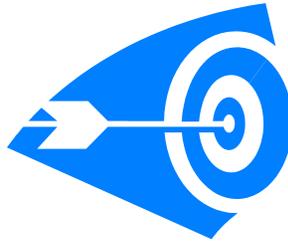
On 31<sup>st</sup> December, 2010 Vipul Ltd. acquired the shares in Vedika Ltd. On 1<sup>st</sup> April, 2010, Vedika Ltd.'s profit and loss account showed a debit balance of ₹8,000. On 31<sup>st</sup> March, 2011, Vedika Ltd. decided to revalue its fixed assets at ₹2,00,000.

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## STUDY VII

# VALUATION OF SHARES AND INTANGIBLE ASSETS

### LEARNING OBJECTIVES



To appreciate the need for valuation of shares.

- Understand the different methods of valuation of shares.
- Familiarize with the concept of fair value of shares.
- Understand the procedure of valuation of preference shares.
- Understand the meaning of intangible assets.
- Evaluate the identifiability of intangible assets.
- Explain the recognition of intangible assets.
- Appreciate the acquisition of intangible assets by way of government grants.
- Understand the treatment of internally generated goodwill.
- Conceptualize the recognition of an expense on intangible assets.
- Explain the amortization of intangible assets
- Explain the retirement and disposals of intangible assets.

## I. VALUATION OF SHARES

### 1. NEED FOR VALUATION OF SHARES

The necessity for valuation of shares arises *inter alia* in the following circumstances:

- (i) Assessments under the Wealth Tax or Gift Tax Acts.
- (ii) Purchase of a block of shares which may or may not give the holder thereof a controlling interest in the company.
- (iii) Purchase of shares by employees of the company where the retention of such shares is limited to the period of their employment.
- (iv) Formulation of schemes of amalgamation, absorption, etc.
- (v) Acquisition of interest of dissenting shareholders under a scheme of reconstruction.
- (vi) Compensating shareholders on the acquisition of their shares by the Government under a scheme of rationalisation.

- (vii) Conversion of shares, say, preference into equity.
- (viii) Advancing a loan on the security of shares.
- (ix) Resolving a deadlock in the management of a private limited company on the basis of the controlling block of shares being given to either of the parties.

Normally, the price prevailing on the stock exchange is accepted. However, valuation by expert is called for when parties involved in the transaction/deal/scheme, etc., fail to arrive at a mutually acceptable value or the agreements or Articles of Association, etc., provide for valuation by experts. For isolated transactions of relatively small blocks of shares which are quoted on the stock exchanges, generally the ruling stock exchange price provides the basis. Thus, valuation by a valuer becomes necessary when:

- (i) Shares are unquoted.
- (ii) Shares relate to private limited companies.
- (iii) Courts so direct.
- (iv) Articles of Association or relevant agreements so provide.
- (v) Large block of shares is under transfer.
- (vi) Statutes so require.

## **2. METHODS OF VALUATION OF SHARES**

Principally two basic methods are used for share valuation: one on the basis of net assets and the other on the basis of earning capacity or yield.

### **2.1 Net Assets Basis or Intrinsic Value Method**

The method relating to net asset basis may take various forms depending upon circumstances:

- (i) Break-up value method (or liquidation value method);
- (ii) Appraised value method; and
- (iii) Book-value method.

Depending on the circumstances of the case, goodwill may or may not be included. Goodwill comes in for distinct consideration only when the number of shares involved is large giving to the holder a measure of control. Normally, earning represents the result of application of all assets of every description in the business, whether it is plant and machinery or goodwill or patent or know-how; for a small number of shares in a going concern, earning is the only appropriate basis.

Valuation on the basis of assets is generally not recommended for a going concern, because, there, the predominant factor is yield; but for certain types of companies, for example, investment companies, assets basis valuation may be acceptable since yield itself will depend almost wholly on the assets position. In case of a company in respect of which no realistic yield or earning capacity is discernible, because of highly uneven past results, valuation only on assets basis may be acceptable.

For a company which shows consistent loss over a number of immediate past years and which has no apparent prospect of recovery, the appropriate method would be the break-up value method. According to Sidney, an authority in share valuation, the realisable value of assets, for arriving at the break-up value, should be discounted at rates varying from 20% to 33 $\frac{1}{3}$ % for taking care of realisation losses and expenses. Book value method does not have any practical application except to disclose the unexpired costs of asset of a going concern which were acquired in the course of the company's operations. But statutes like the Gift Tax Act, Wealth Tax Act, etc., have in fact adopted book value method for valuation of unquoted equity shares for companies other than an investment company. Book value of assets does help the valuer in determining the useful employment of such assets and their state of efficiency. In turn, this leads the valuer to the determination of rehabilitation requirements with reference to current replacement values.

In all cases of valuation on assets basis, except book value basis, it is important to arrive at current replacement and realisation value. It is more so in case of assets like patents, trade marks, know-how, etc., which may possess values substantially more or less than those shown in the books.

The mechanism of asset valuation is simple:

- (i) Arrive at the current replacement costs of assets for valuation based on appraisal or, in the case of a firm which is not a going concern, determine the net realisable value for break-up valuation and deduct therefrom all liabilities in the books of account and such other liabilities which have not been recorded but are likely to rank for payment, and the amount payable to preference shareholders. The approach should be conservative. Under provision for taxation, liabilities on account of gratuities, arrears of preference dividends, etc., are instances, of what may not appear in books.
- (ii) If circumstances suggest existence of goodwill from a study of the profit record, particular advantages, etc., the same should be evaluated with reference to any method appropriate for the purpose for addition to the result obtained in (i) above.
- (iii) The result, as arrived at, shall represent the asset value for the whole undertaking; to arrive at value per share, the same should be divided by the number of equity shares in the company provided all shares are equally paid-up. If the company has equity shares of varying fully paid-up values, the total value should first be allocated to the different paid-up value groups and each such allocation would be divided by the number of shares in each of such groups.

## **2.2 Yield Basis**

Yield basis valuation may take the form of valuation based on rate of return and productivity factor.

### **2.2.1 Valuation Based on Rate of Return**

Rate of return refers to the returns which a shareholder earns on his investment. It may be classified into (a) Rate of dividend and (b) Rate of earning.

*Valuation based on rate of dividend:* This method of valuation is suitable for small blocks of shares because small shareholders are usually interested in dividends. The value of a share according to this method is ascertained as follows:

$$\text{Value of share} = \frac{\text{Possible rate of dividend}}{\text{Normal rate of dividend}} \times \text{Paid up value per share}$$

OR

$$= \frac{\text{Dividend (in rupees) per share}}{\text{Normal rate of dividend}} \times 100$$

$$\text{Possible rate of dividend} = \frac{\text{Total profit available for dividend}}{\text{Total paid up equity capital}} \times 100$$

In other words, dividend on equity shares should be calculated by deducting from the maintainable profits:

- (i) taxation;
- (ii) transfers to reserve;
- (iii) transfers to debenture redemption fund;
- (iv) preference dividend, and

by dividing the remaining by the number of shares.

*Valuation based on rate of earning:* This method of valuation of shares is suitable for valuing large block of company's shares because they are more interested in company's earnings rather than what the company distributes in the form of dividends. The value of a share on this basis can be calculated as follows:

$$\text{Value of share} = \frac{\text{Rate of earning}}{\text{Normal rate of earning}} \times \text{Paid-up value per share}$$

$$\text{Rate of earning} = \frac{\text{Actual profit earned}}{\text{Capital employed}} \times 100$$

Rate of earning is calculated by taking into account the total capital employed including long-term borrowings. Since the total capital is taken into account, the profit figure should be before debenture interest, preference dividend but after income tax. This is quite appropriate when the dividend is much more than the rate of earning on capital.

Valuation based on price earning ratio: This method is suitable for ascertaining the market value of shares which are quoted on a recognised stock exchange. According to this method, the shares are valued on the basis of earning per share multiplied by price earning ratio. Thus,

$$\text{Market value of share} = \text{Price earning ratio} \times \text{Earning per share}$$

$$\text{Earning per share} = \frac{\text{Profit available for equity shareholders}}{\text{Number of equity shares}}$$

$$\text{Price earning ratio} = \frac{\text{Market value per share}}{\text{Earning per share}}$$

*Capitalisation factor:* The value of a share according to yield basis can also be ascertained by finding out the capitalisation factor or the multiplier. The capitalisation factor will be ascertained by dividing 100 by the normal rate of return.

$$\text{Capitalisation factor} = \frac{100}{\text{Normal rate of return}}$$

The profit available is capitalised by multiplying it with the capitalisation factor. The value of equity share is obtained by dividing the capitalised value by the number of equity shares.

### 2.2.2 Valuation Based on Productivity Factor

Productivity factor is a concept of relative earning power. It represents the earning power in relation to the value of assets employed for such earnings. This gives a ratio which is applied to the net worth of the business as on the valuation date to arrive at the projected earning figure for the company. This projected earning after necessary adjustments (discussed later) shall be multiplied by the appropriate capitalisation factor to arrive at the value of the company's business. The total value is divided by the number of equity shares to ascertain the value of each share.

The productivity factor based valuation is really a method for arriving at a reliable figure of future profits. The steps are the following:

- (i) Take a number of years whose results are relevant to the future. Determine net worth of the business at the commencement and close of each of the accounting years under consideration and find out the average net worth for each year by adding the opening and closing net worth and dividing the result by 2; and, in turn, arriving at the average net worth of the business during the period under study.
- (ii) Determine the net worth of the business on the valuation date.
- (iii) Ascertain the average, weighted, if necessary, adjusted profit earned during the years under consideration.
- (iv) Find out the percentage that (iii) bears to (i); that represents the productivity factor i.e.

$$= \frac{\text{Average (weighted) profit} \times 100}{\text{Average (weighted) networkth}}$$

- (v) Apply the productivity factor as obtained in (iv) above to the net worth on the valuation date to find out the projected income in future.
- (vi) Adjust the projected taxed income for factors like appropriations for provision for replacement and rehabilitation of plant and equipment, tax, dividends on preference shares, under utilisation of productive capacity, effects of restrictions on monopoly, etc.
- (vii) Determine the normal rate of return for the company, having particular regard to the nature and size of the undertaking.

- (viii) Determine the appropriate capitalisation factor or the multiplier based on normal rate of return in the way discussed earlier.
- (ix) Apply the multiplier obtained in (viii) above to the adjusted projected taxed income to arrive at the capitalised value of the undertaking.
- (x) Divide the result in (ix) above by the number of equity shares to arrive at the value per share.

In this context, it may be noted that very often companies have non-trading assets like investments, and sometimes idle assets in their balance sheets. The income from non-trading assets does not reflect the earning power of the company and consequently that part of income should be taken out of consideration in determining the average maintainable profit. Also, the value of non-trading and idle assets, after proper determination, should be excluded in the determination of net worth at each stage. But non-trading assets should be added to the value of undertaking as obtained in (ix) above.

### **3. DETERMINATION OF NORMAL RATE OF RETURN AND CAPITALISATION FACTOR**

This obviously has a tremendous bearing on the ultimate result, but unfortunately it is subjective and, therefore, valuers differ more widely in this area than any other in the whole valuation process. As a general rule, the nature of investment would decide the rate of return. Companies, investment in which is more risky would call for a larger rate of return, and, consequently they will have a lower capitalisation factor and lower valuation than companies with assured profits. For investments in Government securities, the risk is least and, consequently, an investor would be content with a very low rate of return. In a logical order, we find mortgage debentures, being riskier than government paper, require slightly higher rate of return. Preference shares are less risky than equity shares but more risky than mortgage debentures; preference shares rank in between debentures and equity shares in the matter of return. Equity shares are exposed to highest risks and, consequently, the normal rate of return is highest in case of equity shares, though equity shares of progressive and soundly managed companies, provide a safeguard against inflation - equity share prices are likely to rise sufficiently high to counteract the effect of a rise in prices.

The above also applies to companies and industries and the normal rate of return will always depend on the attendant risk. In this respect, net tangible asset backing is relevant. The higher net tangible asset backing for each share, greater would be the confidence of the investor. Normally, 2 to 3 times backing is considered satisfactory. This ratio should be reviewed carefully to ascertain whether shares are inadequately covered or too much covered which may indicate over capitalisation in the form of idle funds or inadequate use of productive resources. Symptoms suggesting idle assets would be holding of large cash and bank balances, high current ratio, unutilised land, plant and machinery, etc. The normal rate of return should be increased suitably in either case. Further, if any disabilities attach to the concerned share such as the share being partly paid, the normal rate of return would be higher.

If the concerned company has special features, the normal rate of return will have to be suitably modified. Thus, the following additional factors are to be considered:

- (i) Restrictions on transfer of shares - The normal rate of return will be increased say, by  $\frac{1}{2}\%$ .

- (ii) Disabilities attached to shares will also cause the normal rate of return to go up e.g. if shares are partly paid-up, the investors will expect a higher yield (say by ½% higher) than in case of fully paid shares.
- (iii) Dividend performance - stability in dividend will decrease the normal rate.
- (iv) Financial prudence on the part of the company's management also affects the normal rate of return. A company which distributes only a part of the profit will attract investors without offering high yield.
- (v) Net asset backing is important from the point of view of safety. The poor net asset backing will increase the normal rate since the investors consider themselves unsafe.

#### 4. FAIR VALUE OF SHARES

The fair value of a share is the average of the value of shares obtained by the net assets method and the one obtained by yield method. Under net assets method, the value of an equity share is arrived at by valuing the assets of a company and deducting therefrom all the liabilities and claims of preference shareholders and dividing the resultant figure by the total number of equity shares with the same paid up value. Under yield method, the value of an equity share is arrived at by comparing the expected rate of return with the normal rate of return. If the expected rate of return is more than normal rate of return, the market value of the share is increased proportionately.

The fair value of shares can be calculated by using the following formula:

$$\text{Fair value of share} = \frac{\text{Value by net asset method} + \text{Value by yield method}}{2}$$

This method is also known as dual method of share valuation. This method attempts to minimise the demerits of both the methods. This is of course, no valuation but a compromised formula for bringing the parties to an agreement. However, it is recognised in Government circles for valuing shares of investment companies for wealth tax purposes.

#### 5. SPECIAL FACTORS FOR VALUATION OF SHARES

Valuation of equity shares must take note of special features in the company or in the particular case. These are briefly stated below:

(a) *Importance of the size of the block of shares:* Valuations of the identical shares of a company may vary quite significantly at the same point of time on a consideration of the size of the block of shares under negotiation. It is common knowledge that the holder of 75% of the voting power in a company can alter even the provisions of the articles of association to suit himself; a holder of voting power exceeding 50% and less than 75% can substantially influence the operations of the company even to alter the articles of association or comfortably pass a special resolution.

Even persons holding less than 50% of the total voting strength in a public limited company may control the affairs of the company, if the shares carrying the rest of the voting power are widely scattered; such shareholders rarely combine to defeat a

determined block. Usually a person holding 10 to 15% of the total voting power is in a position to have his way in the company - even to change the provisions of the articles of association or pass any special resolution.

The above analysis is associated with the concept of the controlling interest, which according to most authorities carries a separate value to the tune of additional 10 to 20% of the value of shares otherwise obtained.

*(b) Restricted transferability:* Alongwith principal considerations of yield and safety of capital, another important factor is the easy exchangeability or liquidity. Shares of reputed companies generally enjoy the advantage of easy marketability which is of great significance to the holder. At the time of need, he may get cash in exchange of shares without being required to hunt out a willing buyer, or without being required to go through a process of long negotiation and valuation. Generally quoted shares of good companies are preferred for the purpose. On the other hand, holders of shares of unquoted public companies or of private companies do not enjoy this advantage; therefore, such shares, however good, are discounted for lack of liquidity at rates which may be determined on the basis of circumstances of each case. The discount may be either in the form of a reduction in the value otherwise determined or an increase in the normal rate of return. Generally, the articles of private companies contain provisions for offering shares to one who is already a member of the company and this necessarily restricts the ready market for the shares. These shares are also discounted for limited transferability. But exceptions are also there; by acquisition of a small block, if one can extend his holding in the company to such an extent as to effectively control the company, the share values may not be depressed in that deal.

*(c) Dividends and valuation:* Generally companies paying dividends at steady rates enjoy greater popularity and the prices of their shares are high while shares of companies with unstable dividends do not enjoy confidence of the investing public as to the returns they expect to get and consequently they suffer in valuation. For companies paying dividends at unsteady rates, the question of risk also becomes great and it depresses the price. The question of risk may be looked upon from another angle. A company which pays only a small proportion of its profit as dividend and thus builds up reserves is less risky than the one which has a high pay out ratio. The dividend rate is also likely to fluctuate in the latter case. Investors, however, do not like a company whose pay-out ratio is too small.

Shares are generally quoted high immediately before the declaration of dividend if the dividend prospect is good; or immediately after the declaration of dividend (if it is satisfactory) to take care of the dividend money that the prospective holder would get.

*(d) Bonus and right issues:* Share values have been noticed to go up when bonus or right issues are announced, since they indicate an immediate prospect of gain to the holder although, in the ultimate analysis, it is doubtful whether really these can alter the valuation. Bonus issues are made out of the accumulated reserves in the employment of the business, which in no way contribute to the increased earning capacity of the business and ultimately depress the dividend rate since the same quantum of profit would be distributed over a larger number of shares, which in turn

also would depress the market value of the shares. However, a progressive company generally picks up the old rate of dividend after a short while but this is no way a result of bonus issue; it is the contribution of growth potential of the company.

However, in the case of right issues, the existing holders are offered the shares forming part of the new issue; more funds flows into the company for improving the earning capacity. Share values will naturally depend on the effectiveness with which new funds will be used.

## 6. VALUATION OF PREFERENCE SHARES

These are valued on yield basis in a going concern. Compared to equity shares, the rate of return in preference shares would be, generally, lower because of greater safety. With fluctuations in the normal rate of return in respect of preference shares, the value of preference share will fluctuate but in the opposite direction, i.e., if the normal rate of return increases, the value tends to diminish. For instance, 12% preference shares of ₹100 each would be valued at ₹85.72 when the expected rate of return is 14% (i.e.,  $12/14 \times 100$ ). The same share would be valued at ₹120 if the expected rate of return is 10% (i.e.,  $12/10 \times 100$ ).

In case the dividend on cumulative preference shares is in arrears, the present value of such arrears of dividend (if there is a possibility of their payment) should be added to the value of preference share calculated.

As stated earlier, a valuer must exercise his own judgement in valuing preference shares, because of the diminishing real value of the fixed preference dividend. This is considered to be a handicap for sellers in an inflationary economy. The yield based valuation of preference shares would hold good only if:

- (i) the dividend on the share has been paid regularly and it is reasonably expected that it would continue to be paid; and
- (ii) that investment is adjudged by the criteria that the total assets of the concern are equal to 4 or 5 times the preference capital.

Preference shares may have certain additional rights, for example, the right to get an additional share of profits or the right to get the share converted into equity shares at a certain rate. The right to get an additional share of profit will probably increase the market value of the share depending upon the size of the total profit and the conditions under which the additional dividend will come to preference share holders. Total yield per share will have to be worked out and on that basis the market value will be ascertained by the formula:

$$\frac{\text{Total yield per share}}{\text{Normal rate of yield}} \times 100$$

The right to get the preference share converted into equity share will be valuable only if the equity share of the company commands good value in the market. As against this, there will also be the possibility that wholesale conversion into equity shares may depress the dividend on these shares and thus bring down their price. The price of such a right will be roughly equal to the difference in the market value of an equity share and the conversion price. Suppose holders of preference shares of

₹100 have a right to convert their holding into equity shares at the end of 3 years at ₹130 per equity share and the market value of the equity share at the time is likely to be ₹160 which is not likely to be affected by the conversion. The right of conversion in the circumstances would be ultimately worth ₹30 (₹160 minus ₹130). Taking 12% as the proper rate of interest, the present value of such a right (discounting it @ 12% for 3 years) would be ₹21.36. The preference share therefore will command a value based upon its yield plus ₹21.36.

### Illustration 1

From the following figures calculate the value of a share of ₹10 on (i) dividend basis, and (ii) return on capital employed basis, the market expectation being 12%.

Year ended	Capital Employed	Profit	Dividend (%)
31st March	₹	₹	
2008	5,00,000	80,000	12
2009	8,00,000	1,60,000	15
2010	10,00,000	2,20,000	18
2011	15,00,000	3,75,000	20

### Solution:

(i) Valuation of share on dividend basis:

The dividend rate on the simple average is  $65/4$  or  $16\frac{1}{4}\%$ . But since the dividend has been rising it would be better to take the weighted average which come to 17.6% — thus:

Year ended	Rate	Weight	Product
31st March			
2008	12	1	12
2009	15	2	30
2010	18	3	54
2011	20	<u>4</u>	<u>80</u>
		<u>10</u>	<u>176</u>

Dividing 176 by ₹10, we get 17.6%.

The value of the share on the basis of dividend (weighted average) should be

$$\frac{17.6}{12} \times ₹10 = ₹14.67.$$

(ii) Valuation of share on return on capital employed basis:

The return on capital employed for each year and its weighted average is as follows:

Year ended	Return on capital employed %	Weight	Product
31st March			
2008	16	1	16
2009	20	2	40

2010	22	3	66
2011	25	<u>4</u>	<u>100</u>
		<u>10</u>	<u>222</u>

Weighted average is 22.2%.

The value of the share should be:

$$\frac{22.2}{12} \times ₹10 = ₹18.50.$$

### Illustration 2

Balance Sheet of Diamond Ltd. as on 31.3.2011:

<i>Liabilities:</i>	₹
Share capital:	
20,000 shares of ₹10 each	2,00,000
General reserve	40,000
Profit and loss account	32,000
Sundry creditors	1,28,000
Income-tax reserve	<u>60,000</u>
	<u>4,60,000</u>
<i>Assets:</i>	₹
Land and buildings	1,10,000
Plant and machinery	1,30,000
Patents and trade marks	20,000
Stock	48,000
Debtors	88,000
Bank balance	52,000
Preliminary expenses	<u>12,000</u>
	<u>4,60,000</u>

The expert valuer valued the land and buildings at ₹2,40,000; goodwill at ₹1,60,000; and plant and machinery at ₹1,20,000. Out of the total debtors, it is found that debtors of ₹8,000 are bad. The profits of the company have been as follows:

	₹
31.3.2009	92,000
31.3.2010	88,000
31.3.2011	96,000

The company follows the practice of transferring 25% of profits to general reserve. Similar type of companies earn at 10% of the value of their shares. Ascertain the value of shares of the company under:

- (i) intrinsic value method;

- (ii) yield value method; and  
 (iii) fair value method.

**Solution:****Diamond Ltd.***Valuation of shares**(i) Intrinsic value method*

Assets:	₹
Land and buildings	2,40,000
Goodwill	1,60,000
Plant and machinery	1,20,000
Patents and trade marks	20,000
Stock	48,000
Debtors less bad debts	80,000
Bank balance	<u>52,000</u>
	7,20,000
Less: Liabilities:	
Sundry creditors	1,28,000
Net assets	<u>5,92,000</u>

$$\begin{aligned} \text{Intrinsic value of shares (each share)} &= \frac{\text{Net Assets}}{\text{No. of shares}} \\ &= \frac{\text{₹ } 5,92,000}{20,000} = \text{₹ } 29.60 \end{aligned}$$

*(ii) Yield value method*

	₹
Total profit of last three years	2,76,000
Less: Bad debts	<u>8,000</u>
	2,68,000
Average profit = $\frac{\text{Rs. } 2,68,000}{3}$	89,333
Add: Decrease in depreciation on plant and machinery say @ 15% on ₹10,000	1,500
Less: Increase in depreciation on land and building say @ 10% on ₹1,30,000	<u>13,000</u>
Average profit	77,833
Less: Transfer to reserve	
@ 25% of ₹77,833	<u>19,458</u>
Profit available for dividend	<u>58,375</u>

$$\text{Rate of dividend} = \frac{\text{Rs. } 58,375}{2,00,000} \times 100 = \text{₹ } 29.187\%$$

$$\begin{aligned} \text{Yield value of each share} &= \frac{\text{Rate of Dividend}}{\text{Normal rate of return}} \times \text{Paid-up value of each share} \\ &= \frac{29.187}{10} \times 10 = ₹29.19 \end{aligned}$$

(iii) Fair value method

$$\begin{aligned} \text{Fair value of each share} &= \frac{\text{Intrinsic value} + \text{Yield Value}}{2} \\ &= \frac{₹ 29.60 + ₹ 29.19}{2} = ₹29.40 \end{aligned}$$

### Illustration 3

From the following particulars calculate the value of share of Z Ltd. on yield basis:

#### Balance Sheet of Z Ltd. as on 31st March, 2011

<i>Liabilities</i>	₹	<i>Assets</i>	₹
80,000 equity shares of ₹10 each	8,00,000	Land and buildings	5,00,000
4,000 9% preference shares of ₹100 each	4,00,000	Plant and machinery	6,00,000
10% Debentures	2,00,000	Patents	2,00,000
Reserves	4,00,000	Sundry debtors	3,00,000
Sundry creditors	<u>4,00,000</u>	Work-in-progress and stock	5,00,000
	<u>22,00,000</u>	Cash at bank	<u>1,00,000</u>
			<u>22,00,000</u>

Land and buildings to be valued at ₹9,00,000. The company's earnings were as follows:

<i>Year ended 31st March</i>	<i>Profits before tax</i> (₹)	<i>Tax paid</i> (₹)
2007	3,00,000	80,000
2008	4,00,000	1,60,000
2009	1,00,000	40,000 (Strike)
2010	5,00,000	2,30,000
2011	5,50,000	3,00,000

The company paid managerial remuneration of ₹60,000 per annum but it will become ₹1,00,000 in future. There has been no change in capital employed. The company paid dividend of 90 paise per share and it will maintain the same in future. The company proposes to build up a plant rehabilitation reserve. Dividend rate in this type of company is fluctuating and the asset backing of an equity share is about 1-1/2 times. The equity shares with an average dividend of 8% sell at par. (Tax rate is assumed to be 40%).

**Solution:**

Average maintainable profits in future. Profit of 2008-09 is not considered because of low profits for abnormal reasons.

<i>Year ended</i>	<i>Profits</i>	<i>Weight</i>	<i>Product</i>
<i>31st March</i>	₹	₹	
2007	3,00,000	1	3,00,000
2008	4,00,000	2	8,00,000
2010	5,00,000	3	15,00,000
2011	5,50,000	<u>4</u>	<u>22,00,000</u>
		<u>10</u>	<u>48,00,000</u>

Weighted average:	₹	4,80,000
Adjustment:		
Less: Increase in managerial remuneration		<u>40,000</u>
		4,40,000
Less: Tax @ 40%		<u>1,76,000</u>
Profit available for distribution		2,64,000
Less: Rehabilitation Reserve (12.5% estimated)		<u>33,000</u>
		2,31,000
Less: Dividend on Preference Shares		36,000
Profit available for distribution to equity shareholders		<u>1,95,000</u>

$$₹1,95,000 \text{ capitalised at } 8\% = \frac{₹1,95,000 \times 100}{8} = ₹24,37,500$$

$$\text{The value of equity share will be} = \frac{₹24,37,500}{80,000} = ₹30.47$$

*Alternatively:*

Assets backing per equity share:		₹
Total Asset as per balance sheet		22,00,000
Add: Increase in value of land and buildings		<u>4,00,000</u>
		26,00,000
Less: Sundry creditors	4,00,000	
10% Debentures	2,00,000	
9% Preference shares	<u>4,00,000</u>	<u>10,00,000</u>
Net assets available for equity shareholders		<u>16,00,000</u>
Equity share capital		8,00,000

Asset backing	2 times
Normal dividend rate	8.0%
Less: For higher dividend rate (9%) and stability (say)	0.5%
Less: For higher asset backing 2 times as compared to 1.5 times) (say)	<u>0.5%</u>
Adjusted normal rate of return	<u>7.00</u>
Capital employed:	
Equity share capital	8,00,000
9% Preference share capital	4,00,000
10% Debentures	2,00,000
Reserves	4,00,000
Increase in value of land and buildings	<u>4,00,000</u>
	<u>22,00,000</u>
Profit after tax	2,64,000
Add: Debenture interest (after effect of income tax)	<u>12,000</u>
Profit earned	<u>2,88,000</u>

$$\text{Rate of earning: } \frac{\text{₹ } 2,88,000}{\text{₹ } 22,00,000} \times 100 = 13.09\%$$

(Since the capital employed includes the amount of debentures, debenture interest after the effect of income tax has been adjusted.)

Value of share:

$$\text{On actual dividend basis} = \frac{9}{7} \times 10 = \text{₹}12.90 \text{ (appx.)}$$

$$\text{On earning basis} = \frac{10.45}{7} \times 10 = \text{₹}18.7$$

#### Illustration 4

Year ended 31st March	Average net worth (excluding investment) ₹	Adjusted taxed profit ₹
2009	18,50,000	1,80,000
2010	21,20,000	2,00,000
2011	21,30,000	2,30,000

The aforesaid figures relate to a company which has ₹10,00,000 on equity shares of ₹100 each and ₹3,00,000 in 9% preference shares of ₹100 each. The company has investments worth ₹2,50,000 (at market value) on the valuation date the yield in respect of which has been excluded in arriving at the adjusted tax profit figures. It is usual for similar type of companies to set aside 25% of the taxed profit for rehabilitation and replacement purposes. On the valuation day the net worth

(excluding investment) amounts to ₹22,00,000. The normal rate of return expected is 9%. The company paid dividends consistently within a range of 8 to 10% on equity shares over the previous seven years and the company expects to maintain the same. Compute the value of each equity share on the basis of productivity.

**Solution:**

Since both profits and net worth of the company are showing a steady growth, it would be reasonable to attach due weightage to them for valuation purposes.

Year ended 31st March	Average Net worth ₹	Adj. taxed profit ₹	Weight factors	Weighted Net worth ₹	Profit ₹
2009	18,50,000	1,80,000	1	18,50,000	1,80,000
2010	21,20,000	2,00,000	2	42,40,000	4,00,000
2011	21,30,000	2,30,000	<u>3</u>	<u>63,90,000</u>	<u>6,90,000</u>
			<u>6</u>	<u>1,24,80,000</u>	<u>12,70,000</u>
Weighted average				20,80,000	2,11,667

$$\text{Productivity Factor} = \frac{\text{₹}2,11,667}{\text{₹}20,80,000} \times 100 = 10.18\%$$

Net worth on valuation date = ₹22,00,000	₹
Projected future maintainable profit = 10.18% of ₹22,00,000	2,23,960
Less: Rehabilitation and replacement @ 25%	<u>55,990</u>
	1,67,970
Less: Preference Dividend	<u>27,000</u>
	<u>1,40,970</u>
₹1,40,970 capitalised @ 9% rate of return would be	15,66,333
Add: Value of investments	<u>2,50,000</u>
Value of 10,000 equity shares	<u>18,16,333</u>

$$\text{Therefore, the value of each equity share would be} = \frac{18,16,334}{10,000} = \text{₹}181.63.$$

**Illustration 5**

From the following balance sheet of M.P. Products Ltd., find out the values of equity shares and preference shares:

**Balance Sheet of M.P. Products Ltd.**

Liabilities	₹	Assets	₹
20,000 equity shares of ₹10 each	2,00,000	Goodwill	25,000
8% 1,000 preference shares of ₹100 each	1,00,000	Machinery	1,60,000
Reserves	30,000	Furniture	5,000
Profit and loss account	10,000	Stock	80,000
		Debtors	1,50,000
		Cash	2,000

Sundry creditors	60,000	Preliminary expenses	3,000
Other liabilities	12,000		
Overdraft	5,000		
Proposed preference dividend	<u>8,000</u>		
	<u>4,25,000</u>		<u>4,25,000</u>

Goodwill is valued at ₹15,000. Stock is overvalued by ₹10,000. Machinery is undervalued by ₹15,000.

### Solution

		₹
<i>Net Assets:</i>		
Goodwill		15,000
Machinery		1,75,000
Furniture		5,000
Stock		70,000
Debtors		1,50,000
Cash		<u>2,000</u>
		4,17,000
<i>Less: Liabilities</i>		
Creditors	60,000	
Proposed preference dividend	8,000	
Overdraft	5,000	
Other liabilities	<u>12,000</u>	<u>85,000</u>
		3,32,000
<i>Less: Preference share capital</i>		<u>1,00,000</u>
<i>Net Assets for equity shareholders</i>		<u>2,32,000</u>

Intrinsic value of equity shares: ₹2,32,000 ÷ 20,000 = ₹11.60 per share.

*Intrinsic value of preference shares:*

₹100 + Proposed dividend i.e., ₹(8,000 ÷ 1,000) = ₹8 = ₹108 per share.

If they are participating preference shares, the excess of net assets less preference share capital over the paid-up value of equity shares will be distributed over equity shares and preference shares converting them to equivalent number of same paid-up values. The share of surplus appropriate to each equity and preference share is to be added to the paid up amount of the respective shares. The total excess may also be distributed in the ratio of equity capital and preference capital. Participating shares in this connection are taken to mean that they participate in surplus in liquidation *pari-passu* with equity shares. In reality, the articles of association will govern the situation.

Assuming the preference shares in Illustration above are participating shares, determine the values of equity shares and preference shares, assuming they rank *pari-passu*.

	₹
Net Assets less preference share capital (as above)	2,32,000
Less: Equity share capital	<u>2,00,000</u>
Surplus	<u>32,000</u>

Equivalent number of equity and preference shares :

20,000 equity shares equivalent to	20,000 shares of ₹10 each
1,000 preference shares equivalent to	<u>10,000 shares of ₹10 each</u>
	<u>30,000 shares of ₹10 each</u>

$$\text{Surplus per share of ₹10} = \frac{\text{₹ } 32,000}{30,000} = \text{₹}1.07$$

Hence the value of equity shares: ₹10 + ₹1.07 = ₹11.07 per share.

Value of preference shares: ₹100 + ₹8 + (₹1.07 × 10) = ₹118.70

Or, the surplus of ₹32,000 may be divided between equity capital and preference capital in the ratio of 2 : 1, i.e., ₹21,333 and ₹10,667 respectively.

Values of shares:

$$\text{Equity: } \frac{2,00,000 + 21,333}{20,000} = \frac{2,21,333}{20,000} = 11.07$$

$$\text{Preference: } \frac{1,00,000 + 10,667 + 8,000}{1,000} = \frac{1,18,667}{1,000} = \text{₹}118.67.$$

### Illustration 6

The following is the balance sheet of Mark Ltd., as 31<sup>st</sup> March, 2011

Liabilities	₹	Assets	₹
Share Capital :		Sundry Assets	5,48,000
10,000 12% Preference Shares of ₹10 each fully paid	1,00,000	Preliminary Expenses	5,000
30,000 Equity Shares of ₹10 each fully paid	3,00,000	Discount on debentures	2,000
General Reserve	10,000	Profit & Loss Account	35,000
Debenture redemption fund	20,000		
Depreciation fund	15,000		
10% Debentures	50,000		
Sundry Creditors	<u>95,000</u>		
	<u>5,90,000</u>		<u>5,90,000</u>

The debenture interest is owing for six months and dividends on preference shares are in arrears for one year. Assuming the assets are worth their book values, show the approximate value of preference and equity shares if :

- (i) Preference shares are preferential as to capital and arrears are payable in a winding up; and:

- (ii) Preference shares are preferential as to capital but arrears of preference dividends are not payable.

**Solution:**

<i>Calculation of net assets</i>	₹	₹
Sundry Assets		5,48,000
Less: Depreciation Fund	15,000	
10% Debentures	50,000	
Sundry Creditors	95,000	
Debentures interest for six months	<u>2,500</u>	<u>1,62,500</u>
		<u>3,85,500</u>

- (i) If preference shares are preferential as to capital and arrears are payable in a winding up, then the share valuation will be as under :

	₹	₹
Net Assets		3,85,500
First payments to the preference shareholders :		
Preference Share Capital	1,00,000	
Arrears of preference dividends for one year @ 12%	<u>12,000</u>	<u>1,12,000</u>
Balance to equity shareholders		<u>2,73,500</u>

Hence, Worth of Preference Shares :  $\frac{1,12,000}{10,000} = ₹11.20$  each

Equity Shares :  $\frac{2,73,500}{30,000} = ₹9.12$  each

- (ii) If preferential shares are preferential as to capital but arrears are not payable, then the valuation will be as follows :

	₹
Net Assets	3,85,500
Less: Preference Share Capital	<u>1,00,000</u>

Hence Valuation of :

Per Preference Share :  $\frac{1,00,000}{10,000} = ₹10$  each

Per Equity Share :  $\frac{2,85,000}{30,000} = ₹9.52$  each

## II. VALUATION OF INTANGIBLE ASSETS

### 7. INTANGIBLE ASSETS

Intangible asset is defined as a capital asset having no physical existence, its value being dependent on the rights that possession confers upon the owner.

Intangible assets are expected to benefit the firm beyond the current operating cycle of the business. It implies that they are non-current assets. Intangibles are not basically different from other non-monetary assets as they are expected to benefit the owner beyond the current operating cycle of the business. But like other non-monetary assets, intangibles asset has no physical existence. Thus, intangibles are assets which cannot be seen, touched and have no volume like tangibles but have right to future benefits. However, not all assets which lack physical substance are regarded as intangible assets i.e., account receivables, short-term pre-payment etc., are of non-physical nature but classified as current assets.

Though intangibles provide future benefits, there is a high degree of uncertainty regarding the value of the future benefits to be received. Some intangibles relate to the development and manufacture of a product, such as, patents, copyrights, etc. while some others relate to the creation and maintenance of the demand for the product such as, trade marks.

Accounting Standard (AS) 26 'Intangible Assets' issued by the Institute of Chartered Accountants of India deals with meaning and valuation of intangible assets. According to this Accounting Standard, an intangible asset is an identifiable non-monetary asset, without physical substance, held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.

To understand this definition, the meaning of non-monetary asset must be clear. An asset is a resource (a) controlled by an enterprise as a result of past events; and (b) from which future economic benefits are expected to flow to the enterprise. Monetary assets are money held and assets to be received in fixed or determinable amounts of money. Non-monetary assets are assets other than monetary assets.

Following are the features of intangible assets :

- (i) It is non-physical in nature.
- (ii) It gives the specific rights to the holders over several future years.
- (iii) It is possible for multiple uses at the same time.
- (iv) It creates future value.
- (v) It is identifiable as non-monetary asset.
- (vi) It has limited ability to protect property rights.
- (vii) Investment in intangible assets is basically risky.

Enterprises frequently expend resources, or incur liabilities, on the acquisition, development, maintenance or enhancement of intangible resources such as scientific or technical knowledge, design and implementation of new processes or systems, licences, intellectual property, market knowledge and trademarks (including brand names and publishing titles). Common examples of items encompassed by these broad headings are computer software, patents, copyrights, motion picture films, customer lists, mortgage servicing rights, fishing licences, import quotas, franchises, customer or supplier relationships, customer loyalty, market share and marketing rights. Goodwill is another example of an item of intangible nature which either arises on acquisition or is internally generated.

Not all the items described in the above paragraph will meet the definition of an intangible asset, that is, identifiably, control over a resource and expectation of future

economic benefits flowing to the enterprise. If an item covered by AS-26 does not meet the definition of an intangible asset, expenditure to acquire it or generate it internally is recognised as an expense when it is incurred. However, if the item is acquired in an amalgamation in the nature of purchase, it forms part of the goodwill recognised at the date of the amalgamation.

Some intangible assets may be contained in or on a physical substance such as a compact disk (in the case of computer software), legal documentation (in the case of a licence or patent) or film (in the case of motion pictures). The cost of the physical substance containing the intangible assets is usually not significant. Accordingly, the physical substance containing an intangible asset, though tangible in nature, is commonly treated as a part of the intangible asset contained in or on it.

In some cases, an asset may incorporate both intangible and tangible elements that are, in practice, inseparable. In determining whether such an asset should be treated Fixed Assets, or as an intangible asset under AS 26, judgement is required to assess as to which element is predominant.

The definition of an intangible asset requires that an intangible asset be identifiable. To be identifiable, it is necessary that the intangible asset is clearly distinguished from goodwill. Goodwill arising on an amalgamation in the nature of purchase represents a payment made by the acquirer in anticipation of future economic benefits.

An intangible asset can be clearly distinguished from goodwill if the asset is separable. An asset is separable if the enterprise could rent, sell, exchange or distribute the specific future economic benefits attributable to the asset without also disposing of future economic benefits that flow from other assets used in the same revenue earning activity. But separability is not a necessary condition for identifiability since an enterprise may be able to identify an asset in some other way.

An enterprise controls an asset if the enterprise has the power to obtain the future economic benefits flowing from the underlying resource and also can restrict the access of others to those benefits.

Market and technical knowledge may give rise to future economic benefits. An enterprise controls those benefits if, for example, the knowledge is protected by legal rights such as copyrights, or a restraint of trade agreement (where permitted).

The future economic benefits flowing from an intangible asset may include revenue from the sale of products or services, cost savings, or other benefits resulting from the use of the asset by the enterprise. For example, the use of intellectual property in a production process may reduce future production costs rather than increase future revenues.

## **8. APPROACHES FOR VALUING INTANGIBLE ASSETS**

Valuation of intangible assets is a difficult exercise. The physical form of intangible assets makes it difficult to identify the future economic benefits that the organisation can expect to obtain from the intangible assets. Many intangible assets do not have alternative use and cannot be divided into components or parts for resale. Infact, intangible assets normally do not have an active market. Many times,

they are not separable from the business and hence it becomes difficult to value them separately from the business.

There are three approaches used in valuing intangible assets; (i) cost approach, (ii) market value approach and (iii) economic value approach. The valuer has to select the approach after considering a number of factors like credibility, objectivity, relevance and practicality.

In cost approach, expenditure incurred in developing the asset is aggregated. If the asset has been purchased recently, its purchase price may be taken to be the cost.

In market value approach, valuation is made by reference to transactions involving similar assets that have taken place recently in similar markets. The approach is possible if there is existence of an active market of comparable intangible assets and adequate information in respect of transactions that have taken place recently is available.

Economic value approach is based on the cash flows or earnings attributable to those assets and the capitalisation thereof, at an appropriate discount rate or multiple. The valuer has to identify the cash flow-earnings directly associated with the intangible assets like the cash flows arising from the utilization of a patent or copyright, licensing of an intangible asset, etc. It is possible only if cash flows from the intangible asset are identifiable from the accounts and budgets, forecasts or plans of the enterprise.

## **9. RECOGNITION AND INITIAL MEASUREMENT OF AN INTANGIBLE ASSET**

An intangible asset should be recognised if, and only if:

- (a) it is probable that the future economic benefits that are attributable to the asset will flow to the enterprise; and
- (b) the cost of the asset can be measured reliably.

An enterprise should assess the probability of future economic benefits using reasonable and supportable assumptions that represent best estimate of the set of economic conditions that will exist over the useful life of the asset. An intangible asset should be measured initially at cost.

## **10. SEPARATE ACQUISITION OF INTANGIBLE ASSETS**

If an intangible asset is acquired separately, the cost of the intangible asset can usually be measured reliably. This is particularly so when the purchase consideration is in the form of cash or other monetary assets. The cost of an intangible asset comprises its purchase price, including any import duties and other taxes (other than those subsequently recoverable by the enterprise from the taxing authorities), and any directly attributable expenditure on making the asset ready for its intended use. Directly attributable expenditure includes, for example, professional fees for legal services. Any trade discounts and rebates are deducted in arriving at the cost. If an intangible asset is acquired in exchange for shares or other securities of the reporting enterprise, the asset is recorded at its fair value, or the fair value of the securities issued, whichever is more clearly evident.

## **11. ACQUISITION OF INTANGIBLE ASSETS AS PART OF AN AMALGAMATION**

An intangible asset acquired in an amalgamation in the nature of purchase is accounted for in accordance with Accounting Standard (AS) 14, Accounting for Amalgamations.

Judgement is required to determine whether the cost (i.e. fair value) of an intangible asset acquired in an amalgamation can be measured with sufficient reliability for the purpose of separate recognition. Quoted market prices in an active market provide the most reliable measurement of fair value. If no active market exists for an asset, its cost reflects the amount that the enterprise would have paid, at the date of the acquisition, for the asset in an arm's length transaction between knowledgeable and willing parties, based on the best information available.

Certain enterprises that are regularly involved in the purchase and sale of unique intangible assets have developed techniques for estimating their fair values indirectly. These techniques may be used for initial measurement of an intangible asset acquired in an amalgamation in the nature of purchase if their objective is to estimate fair value and if they reflect current transactions and practices in the industry to which the asset belongs. These techniques include, where appropriate, applying multiples reflecting current market transactions to certain indicators driving the profitability of the asset (such as revenue, market shares, operating profit, etc.) or discounting estimated future net cash flows from the asset.

A transferee recognises an intangible asset that meets the recognition criteria, even if that intangible asset had not been recognised in the financial statements of the transferor; and if the cost (i.e. fair value) of an intangible asset acquired as part of an amalgamation in the nature of purchase cannot be measured reliably, that asset is not recognised as a separate intangible asset but is included in goodwill.

Unless there is an active market for an intangible asset acquired in an amalgamation in the nature of purchase, the cost initially recognised for the intangible asset is restricted to an amount that does not create or increase any capital reserve arising at the date of the amalgamation.

## **12. ACQUISITION OF INTANGIBLE ASSETS BY WAY OF A GOVERNMENT GRANT**

In some cases, an intangible asset may be acquired free of charge, or for nominal consideration, by way of a government grant. This may occur when a government transfers or allocates to an enterprise intangible assets such as airport landing rights, licences to operate radio or television stations, import licences or quotas or rights to access other restricted resources. Such an intangible asset is recognised at a nominal value or at the acquisition cost, as appropriate; any expenditure that is directly attributable to making the asset ready for its intended use is also included in the cost of the asset.

## **13. INTERNALLY GENERATED GOODWILL**

Internally generated goodwill should not be recognised as an asset.

To assess whether an internally generated intangible asset meets the criteria for recognition, an enterprise classifies the generation of the asset into:

- (a) a research phase; and
- (b) a development phase.

If an enterprise cannot distinguish the research phase from the development phase of an internal project to create an intangible asset, the enterprise treats the expenditure on that project as if it were incurred in the research phase only.

### **13.1 Research Phase**

No intangible asset arising from research (or from the research phase of an internal project) should be recognised. Expenditure on research (or on the research phase of an internal project) should be recognised as an expense when it is incurred.

Examples of research activities are:

- (a) activities aimed at obtaining new knowledge;
- (b) the search for, evaluation and final selection of, applications of research findings or other knowledge;
- (c) the search for alternatives for materials, devices, products, processes, systems or services; and
- (d) the formulation, design, evaluation and final selection of possible alternatives for new or improved materials, devices, products, processes, systems or services.

### **13.2 Development Phase**

An intangible asset arising from development (or from the development phase of an internal project) should be recognised if, and only if, an enterprise can demonstrate all of the following:

- (a) the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- (b) its intention to complete the intangible asset and use or sell it;
- (c) its ability to use or sell the intangible asset;
- (d) how the intangible asset will generate probable future economic benefits. Among other things, the enterprise should demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- (e) the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- (f) its ability to measure the expenditure attributable to the intangible asset during its development reliably.

Examples of development activities are:

- (a) the design, construction and testing of pre-production or pre-use prototypes and models;
- (b) the design of tools, jigs, moulds and dies involving new technology;
- (c) the design, construction and operation of a pilot plant that is not of a scale economically feasible for commercial production; and
- (d) the design, construction and testing of a chosen alternative for new or improved materials, devices, products, processes, systems or services.

Internally generated brands, mastheads, publishing titles, customer lists and items similar in substance should not be recognised as intangible assets.

#### **14. COST OF AN INTERNALLY GENERATED INTANGIBLE ASSET**

The cost of an internally generated intangible asset is the sum of expenditure incurred from the time when the intangible asset first meets the recognition criteria. Reinstatement of expenditure recognised as an expense in previous annual financial statements or interim financial reports is prohibited.

The cost of an internally generated intangible asset comprises all expenditure that can be directly attributed, or allocated on a reasonable and consistent basis, to creating, producing and making the asset ready for its intended use. The cost includes, if applicable:

- (a) expenditure on materials and services used or consumed in generating the intangible asset;
- (b) the salaries, wages and other employment related costs of personnel directly engaged in generating the asset;
- (c) any expenditure that is directly attributable to generating the asset, such as fees to register a legal right and the amortisation of patents and licences that are used to generate the asset; and
- (d) overheads that are necessary to generate the asset and that can be allocated on a reasonable and consistent basis to the asset (for example, an allocation of the depreciation of fixed assets, insurance premium and rent). Allocations of overheads are made on bases similar to those used in allocating overheads to inventories. AS 16, Borrowing Costs, establishes criteria for the recognition of interest as a component of the cost of a qualifying asset. These criteria are also applied for the recognition of interest as a component of the cost of an internally generated intangible asset.

The following are not components of the cost of an internally generated intangible asset:

- (a) selling, administrative and other general overhead expenditure unless this expenditure can be directly attributed to making the asset ready for use;
- (b) clearly identified inefficiencies and initial operating losses incurred before an asset achieves planned performance; and
- (c) expenditure on training the staff to operate the asset.

#### **15. RECOGNITION OF AN EXPENSE ON INTANGIBLE ASSET**

Expenditure on an intangible item should be recognized as an expense when it is incurred unless:

- (a) it forms part of the cost of an intangible asset that meets the recognition criteria;
- (b) the item is acquired in an amalgamation in the nature of purchase and cannot be recognized as an intangible asset.

If this is the case, this expenditure (included in the cost of acquisition) should form part of the amount attributed to goodwill (capital reserve) at the date of acquisition.

In some cases, expenditure is incurred to provide future economic benefits to an enterprise, but no intangible asset or other asset is acquired or created that can be recognised. In these cases, the expenditure is recognised as an expense when it is incurred. For example, expenditure on research is always recognised as an expense when it is incurred. Examples of other expenditure that is recognised as an expense when it is incurred include:

- (a) expenditure on start-up activities (start-up costs), unless this expenditure is included in the cost of an item of fixed asset. Start-up costs may consist of preliminary expenses incurred in establishing a legal entity;
- (b) expenditure on training activities;
- (c) expenditure on advertising and promotional activities; and
- (d) expenditure on relocating or re-organising part or all of an enterprise.

## **16. SUBSEQUENT EXPENDITURE ON INTANGIBLE ASSETS**

Subsequent expenditure on an intangible asset after its purchase or its completion should be recognised as an expense when it is incurred unless:

- (a) it is probable that the expenditure will enable the asset to generate future economic benefits in excess of its originally assessed standard of performance; and
- (b) the expenditure can be measured and attributed to the asset reliably.

If these conditions are met, the subsequent expenditure should be added to the cost of the intangible asset.

After initial recognition, an intangible asset should be carried at its cost less any accumulated amortisation and any accumulated impairment losses.

## **17. AMORTISATION ON INTANGIBLE ASSETS**

### **17.1 Amortisation Period**

The depreciable amount of an intangible asset should be allocated on a systematic basis over the best estimate of its useful life. There is a rebuttable presumption that the useful life of an intangible asset will not exceed ten years from the date when the asset is available for use. Amortisation should commence when the asset is available for use.

As the future economic benefits embodied in an intangible asset are consumed over time, the carrying amount of the asset is reduced to reflect that consumption. This is achieved by systematic allocation of the cost of the asset, less any residual value, as an expense over the asset's useful life. Amortisation is recognised whether or not there has been an increase in, for example, the asset's fair value or recoverable amount.

Given the history of rapid changes in technology, computer software and many other intangible assets are susceptible to technological obsolescence. Therefore, it is likely that their useful life will be short.

If control over the future economic benefits from an intangible asset is achieved through legal rights that have been granted for a finite period, the useful life of the intangible asset should not exceed the period of the legal rights unless:

- (a) the legal rights are renewable; and
- (b) renewal is virtually certain.

The following factors, among others, indicate that renewal of a legal right is virtually certain:

- (a) the fair value of the intangible asset is not expected to reduce as the initial expiry date approaches, or is not expected to reduce by more than the cost of renewing the underlying right;
- (b) there is evidence (possibly based on past experience) that the legal rights will be renewed; and
- (c) there is evidence that the conditions necessary to obtain the renewal of the legal right (if any) will be satisfied.

### **17.2 Amortisation Method**

The amortisation method used should reflect the pattern in which the asset's economic benefits are consumed by the enterprise. If that pattern cannot be determined reliably, the straight-line method should be used. The amortisation charge for each period should be recognised as an expense unless some Accounting Standard permits or requires it to be included in the carrying amount of another asset.

Amortisation is usually recognised as an expense. However, sometimes, the economic benefits embodied in an asset are absorbed by the enterprise in producing other assets rather than giving rise to an expense. In these cases, the amortisation charge forms part of the cost of the other asset and is included in its carrying amount. For example, the amortisation of intangible assets used in a production process is included in the carrying amount of inventories.

### **17.3 Residual Value**

The residual value of an intangible asset should be assumed to be zero unless:

- (a) there is a commitment by a third party to purchase the asset at the end of its useful life; or
- (b) there is an active market for the asset and:
  - (i) residual value can be determined by reference to that market; and
  - (ii) it is probable that such a market will exist at the end of the asset's useful life.

#### **17.4 Review of Amortisation Period and Amortisation Method**

The amortisation period and the amortisation method should be reviewed at least at each financial year end. If the expected useful life of the asset is significantly different from previous estimates, the amortisation period should be changed accordingly. If there has been a significant change in the expected pattern of economic benefits from the asset, the amortisation method should be changed to reflect the changed pattern. Such changes should be accounted for in accordance with AS 5, Net Profit or Loss for the Period, Prior Period Items and Changes in Accounting Policies.

#### **18. RECOVERABILITY OF THE CARRYING AMOUNT—IMPAIRMENT LOSSES**

To determine whether an intangible asset is impaired, an enterprise applies Accounting Standard on Impairment of Assets, which explains how an enterprise reviews the carrying amount of its assets, how it determines the recoverable amount of an asset and when it recognises or reverses an impairment loss.

If an impairment loss occurs before the end of the first annual accounting period commencing after acquisition for an intangible asset acquired in an amalgamation in the nature of purchase, the impairment loss is recognised as an adjustment to both the amount assigned to the intangible asset and the goodwill (capital reserve) recognised at the date of the amalgamation. However, if the impairment loss relates to specific events or changes in circumstances occurring after the date of acquisition, the impairment loss is recognised under Accounting Standard on Impairment of Assets and not as an adjustment to the amount assigned to the goodwill (capital reserve) recognised at the date of acquisition.

In addition to the requirements of Accounting Standard on Impairment of Assets, an enterprise should estimate the recoverable amount of the following intangible assets at least at each financial year end even if there is no indication that the asset is impaired:

- (a) an intangible asset that is not yet available for use; and
- (b) an intangible asset that is amortised over a period exceeding ten years from the date when the asset is available for use.

The recoverable amount should be determined under Accounting Standard on Impairment of Assets and impairment losses recognised accordingly.

#### **19. RETIREMENTS AND DISPOSALS ON INTANGIBLE ASSETS**

An intangible asset should be derecognised (eliminated from the balance sheet) on disposal or when no future economic benefits are expected from its use and subsequent disposal.

Gains or losses arising from the retirement or disposal of an intangible asset should be determined as the difference between the net disposal proceeds and the carrying amount of the asset and should be recognised as income or expense in the statement of profit and loss.

### LESSON ROUND UP



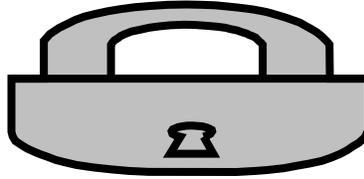
- Principally two basic methods are used for share valuation i.e. net assets basis and earning capacity or yield basis.
- The method relating to net asset basis may be on break-up value method, appraised value method and book-value method.
- Yield basis valuation may take the form of valuation based on rate of return and productivity factor.
- Rate of return refers to the returns which a shareholder earns on his investment which may be classified into rate of dividend and rate of earning.
- The value of a share according to rate of return method is as follows:  

$$\text{Value of share} = \frac{\text{Possible rate of dividend}}{\text{Normal rate of dividend}} \times \text{Paid up value per share}$$
- The value of a share based on rate of earnings is as follows:  

$$\text{Value of share} = \frac{\text{Rate of earning}}{\text{Normal rate of earning}} \times \text{Paid-up value per share}$$
- The fair value of a share is the average of the value of shares obtained by the net assets method and the one obtained by yield method.
- The fair value of shares can be calculated as follows:  

$$\text{Fair value of share} = \frac{\text{Value by net asset method} + \text{Value by yield method}}{2}$$
- An intangible asset is an identifiable non-monetary asset, without physical substance, held for use in the production or supply of goods or services, for rental to others, or for administrative purposes.
- An intangible asset must have: identifiability, control over a resource; and expectation of future economic benefits flowing to the enterprise.
- An intangible asset should be recognised if, and only if: it is probable that the future economic benefits that are attributable to the asset will flow to the enterprise; and the cost of the asset can be measured reliably.
- If an intangible asset is acquired in exchange for shares or other securities of the reporting enterprise, the asset is recorded at its fair value, or the fair value of the securities issued.
- Internally generated goodwill should not be recognized as an asset.
- The cost of an internally generated intangible asset is the sum of expenditure incurred from the time when the intangible asset first meets the recognition criteria.
- The depreciable amount of an intangible asset should be allocated on a systematic basis over the best estimate of its useful life.
- To determine whether an intangible asset is impaired, an enterprise applies Accounting Standard on Impairment of Assets.

## SELF TEST QUESTIONS



1. Compute the values of equity shares of companies A and B on the basis of dividend and that of yield on capital employed. The following information is provided:

	<i>Company A</i>	<i>Company B</i>
	₹	₹
Profit per year	1,00,000	1,00,000
7 ½% Preference capital	2,00,000	6,00,000
Equity capital (₹100 each)	8,00,000	4,00,000

Assume that all the profits were distributed. Market expectation is 10%.

2. You, as Auditor, are required to fix the 'fair value' of the shares of T Ltd., on 31st March, 2011. The company's position was as follows:

<i>Liabilities</i>	₹	₹	<i>Assets</i>	₹	₹
Capital 5,000 shares of ₹100 each fully paid		5,00,000	Bldgs. at cost		80,000
Reserve fund		1,50,000	Furniture at cost		3,000
Depreciation Funds:			Stock-in-trade at market value		4,50,000
Buildings	10,000		Investment at Cost:		
Investments	<u>45,000</u>	55,000	G.P. Notes for ₹2,00,000	1,80,000	
Creditors		48,000	Indian Gold Loan		
Bad debts reserve		20,000	Repayable 2014	<u>2,00,000</u>	3,80,000
Profit and Loss:					
Balance from 2009-10	80,000		Books debts considered good		3,00,000
Profit for 2010-11 (subject to tax of 40%)	<u>4,30,000</u>	5,10,000	Cash and bank balance		<u>70,000</u>
		<u>12,83,000</u>			<u>12,83,000</u>

You are given the following information:

- (1) The company's prospects for 2012-12 are equally good.
- (2) Its buildings are now worth ₹3,50,000.
- (3) Public companies doing similar business show a profit earning capacity of 15 per cent on market value of their shares.

(4) Profits for the past three years have shown an increase of ₹50,000 annually.

(5) Investments yield 8% net on the book value on the whole.

3. Given below is the Balance Sheet of the Imperial Manufacturing Co. Limited:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Capital:		Land (at cost)	2,21,000
8,800 shares of ₹250		Building (at cost)	11,73,000
each fully paid-up	22,00,000	Machinery etc. (at cost)	20,58,000
Reserve fund	8,24,000	Furniture	5,000
Profit and Loss account	36,12,000	Investments (at market value)	17,00,000
Workmen's savings account	2,27,000	Stock-in-trade	
Provident fund account	54,000	(at market value)	26,00,000
Depreciation fund account	4,63,000	Book Debt	3,35,000
Creditors	38,86,000	Cash and other balances	31,49,000
		Debenture charges	25,000
	<u>1,12,66,000</u>		<u>1,12,66,000</u>

Depreciation fund is in excess by ₹54,000 of the amount of actual depreciation. Find out the intrinsic value of the share.

4. It is provided in the Articles of Association that on the death of a shareholder, his shares shall be purchased by the remaining shareholders at a price to be settled by the Auditors, on the basis of the last balance sheet.

It is further provided that for this purpose, goodwill was to be of the value of three years' purchase of the average annual profits for the last four years. The last balance sheet is as follows:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Capital		Goodwill	1,00,000
20,000 shares of ₹10		Investment at cost	
each fully paid	2,00,000	(market value	
Reserve	1,00,000	₹1,25,000)	1,50,000
Debentures	2,00,000	Stock at cost	2,50,000
Sundry creditors	1,50,000	Debtors	1,50,000
Profit and Loss Account	<u>35,000</u>	Cash	<u>35,000</u>
	<u>6,85,000</u>		<u>6,85,000</u>

The profits for the last four years were (after tax) ₹15,000, 20,000, 25,000 and 40,000 respectively.

You are required to state with details of working the price which should be paid per share.

5. What do you mean by intangible asset?

6. Define the term 'useful life' related to intangible asset.
7. What is meant by identifiability of an intangible asset?
8. What are the approaches for valuing intangible assets ?
9. How is an intangible asset recognized? How is initial measurement of an intangible asset done?
10. What are the special points you will keep in mind when an intangible asset is acquired as part of an amalgamation?
11. How is an intangible asset dealt with in the following cases :
  - (a) acquired by way of a government grant; and
  - (b) acquired in an exchange of assets.
12. How will you deal with internally generated intangible assets in the books of account?
13. How does research phase differ from development phase in respect of recognition of an intangible asset?
14. What do you know about ascertainment of cost of an internally generated intangible asset?
15. Which expenditure on an intangible asset is an expense?
16. How is subsequent expenditure on an intangible asset dealt with?
17. What do you know about amortization of an intangible asset?
18. What have you to say in respect of residual value of an intangible asset?
19. (a) During the Year 2009-10, Pragati Ltd. starts developing a new production process. During the year, expenditure incurred was ₹20 lakhs, of which ₹18 lakhs was incurred before 1<sup>st</sup> March, 2010 and 2 lakhs was incurred between 1<sup>st</sup> March, 2010 and 31<sup>st</sup> March, 2010. The company demonstrated that on 1<sup>st</sup> March, 2010 the production process met the criteria for recognition as an intangible asset. The recoverable amount of the know-how embodied in the process (including future cash outflows to complete the process before it was available for use) was estimated to be 10 lakhs.
  - (i) What is the value of the intangible asset as on 31<sup>st</sup> March, 2010?
  - (ii) What amount will be treated as an expense?
- (b) Continuing the problem mentioned in part (a) above, suppose during the year ended 31<sup>st</sup> March, 2011 additional expenditure incurred on the new production process was ₹40 lakhs. On 31<sup>st</sup> March, 2011 the recoverable amount of the know how embodied in the process (including future cash outflows to complete the process before it was available for use) was estimated to be ₹38 lakhs.
  - (i) What is the total cost of the production process on 31<sup>st</sup> March, 2011?

(ii) What is the impairment loss?

(iii) When can impairment loss be reversed in a subsequent period?

*[Ans: (a)(i) 2 lakhs; (ii) ₹ 18 lakhs; (b) (i) 42 lakhs, (ii) 4 lakhs, (iii) The impairment loss will be reserved in a subsequent period if the requirements given in AS-28 on Impairment of Assets are met.]*

20. Brite Lite Ltd. purchases an exclusive right to generate hydro-electric power for fifty years. The costs of generating hydro-electric power are much lower than the costs of obtaining power from alternative sources. It is expected that the geographical area surrounding the power station will demand a significant amount of power from the power station for at least fifty years. What is the period over which the company should amortize the right to generate power? **(Ans. 50 years)**
21. Kwik Ltd. purchases an exclusive right to operate a toll motorway for twenty five years. There is no plan to construct alternative routes in the area served by the motorway. It is expected that this motorway will be in use for at least twenty five years. What is the period over which the company should amortize the right to operate the motorway? **(Ans. 25 years)**
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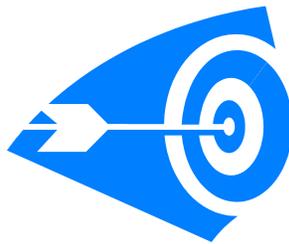
## PART B

# COST AND MANAGEMENT ACCOUNTING

### STUDY VIII

## INTRODUCTION TO COST AND MANAGEMENT ACCOUNTING

### LEARNING OBJECTIVES



After studying this Study Lesson you will be able to:

- Understand the meaning of cost, costing, cost accounting and cost accountancy.
- Mention the general principles of cost accounting.
- Understand the objectives of cost accounting.
- Classify the costs.
- Explain the meaning of cost centre and cost unit.
- Identify the methods and types of costing.
- Specify the procedure for installation of costing system.
- Understand the meaning of management accounting.
- Explain the nature and scope of management accounting.
- Identify the tools and techniques used in management accounting.
- Distinguish between financial accounting, cost accounting and management accounting.

### 1. CONCEPTS OF COST

Cost is the amount of resource given up in exchange for some goods or services. The resources given up are money or money's equivalent expressed in monetary units.

The Chartered Institute of Management Accountants, London defines cost as "the amount of expenditure (actual or notional) incurred on, or attributable to a specified thing or activity".

This activity of a firm may be the manufacture of a product or the rendering of a service which involves expenditure under various heads, e.g., materials, labour, other expenses, etc. A manufacturing organisation is interested in ascertaining the cost per unit of the product manufactured while an organisation rendering service, e.g., transport undertaking, canteen, electricity company, municipality, etc., is interested in

ascertaining the costs of the service it renders. In its simplest form, the cost per unit is arrived at by dividing the total expenditure incurred by the total units produced or the quantum of service rendered. But this method is applicable if the manufacturer produces only one product. If the manufacturer produces more than one product, it becomes imperative to split up the total expenditure between the various products so that the cost of each product can be ascertained separately. Even if only one product is manufactured, it may be necessary to analyse the cost per unit of each item of expenditure that goes to make up the total cost. The problem becomes more complicated where a multiplicity of products is produced and it is necessary to analyse the cost per unit of each product into various items of expenditures that make up the total cost.

For a consumer cost means price. For management cost means 'expenditure incurred' for producing a particular product or rendering a particular service. The process of ascertaining the cost is known as costing. It consists of principles and rules governing the procedure of finding out the costs of goods/ services. It aims at ascertaining the total cost and also per unit cost. For instance, in transport companies the total cost for the period is ascertained and used to find out the cost per passenger/mile. i.e. the cost of carrying one passenger for one mile. It provides for analysis of expenditure in such a way that the management gets complete idea about even the smallest item of cost.

It is necessary to specify the exact meaning of "cost". When the term is used specifically, it is modified with such terms as prime cost, fixed cost, sunk cost, etc. Each description implies a certain characteristic which is helpful in analysing the cost. It helps cost accounting in achieving its three basic objectives namely-cost ascertainment, cost control and cost presentation.

A cost must always be studied in relation to its purpose and conditions. Different costs may be ascertained for different purposes and under different conditions. Work-in-progress is valued at factory cost, while stock of finished goods may be valued at cost of production. Even if the purpose of the study of cost is the same, different conditions may lead to variation in cost. The cost per unit of a product is sure to vary with an increase in the volume of output since the amount of fixed expenses to be borne by each unit of output decreases.

It is also important to note here that there is no such thing as an exact cost or true cost because no figure of cost is true in all circumstances and for all purposes. Most of the costing information is based on estimates; for example, the amount of overheads is generally estimated in advance; it is distributed over cost units, again on an estimated basis using different methods. Many items of cost of production are handled in an optional manner which may give different costs for the same product without going against the accepted principles in any way. Depreciation is one such item, the amount of which will vary in accordance with the method of depreciation being used. Thus, to arrive at an absolutely correct cost may be quite difficult unless one waits for a long time by which time the costing information may lose all its value.

## **2. COSTING, COST ACCOUNTING AND COST ACCOUNTANCY**

### **2.1 Costing**

Costing is the techniques and processes of ascertaining costs. These techniques consist of principles and rules which govern the procedure of ascertaining cost of

products or services. The techniques to be followed for the analysis of expenses and the processes of different products or services differ from industry to industry.

The trading and profit and loss account of a business discloses financial results of the collective activities of the business. Expenditure in total is set against total turnover or income, but no detailed information is available for the factors leading to the profit or loss. Total turnover may comprise of many varied activities, departments, processes, jobs, contracts etc.; some of which may be profitable, while others may be at a loss. The main object of cost accounts is the analysis of financial records, so as to subdivide expenditure and to allocate it carefully to selected cost centers, and hence to build up a total cost for the departments, processes or jobs or contracts of the undertaking.

## 2.2 Cost Accounting

Cost accounting may be regarded as “a specialised branch of accounting which involves classification, accumulation, assignment and control of costs:”. The Costing terminology of C.I.M.A. London defines cost accounting as “the establishment of budgets, standard costs and actual costs of operations, processes, activities or products, and the analysis of variances, profitability or the social use of funds.” Wheldon defines cost accounting as “classifying, recording and appropriate allocation of expenditure for determination of costs of products or services and for the presentation of suitably arranged data for purposes of control and guidance of management”. It is thus, a formal mechanism by means of which costs of products or services are ascertained and controlled.

Cost accounting is different from costing in the sense that the former provides only the basis and information for ascertainment of costs. Once the information is made available, costing can be carried out arithmetically by means of memorandum statements or by method of integral accounting.

## 2.3 Cost Accountancy

Cost Accountancy has been defined as “the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability. It includes the presentation of information derived there from for the purpose of managerial decision making”.

## 3. GENERAL PRINCIPLES OF COST ACCOUNTING

The following may be considered as the general principles of cost accounting:

(1) *A cost should be related to its cause:* Cost should be related as closely as possible to their causes so that cost can be shared only among the cost units passing through that department for which expenses are being considered.

(2) *A cost should be charged only after it has been incurred:* While determining the cost of individual units those costs which have actually been incurred should be considered. e.g., a cost unit should not be charged to the selling costs while it is still in the factory, whereas the selling costs can be charged with the products which are sold.

(3) *The convention of prudence should be ignored:* Usually accountant believes in historical costs and while determining cost, they always attach importance to the historical cost. In cost accounting this convention must be ignored, otherwise, the

management appraisal of the profitability of projects may be vitiated. A cost statement should, as far as possible, give the facts with no known bias. If a contingency needs to be taken into consideration it should be shown separately and distinctly.

(4) *Abnormal costs should be excluded from cost accounts:* Costs which are of abnormal nature (e.g. accident, negligence etc.) should be ignored while computing the cost; otherwise, it will distort cost figures and mislead management as to the working results of their undertaking under normal conditions.

(5) *Past costs not to be charged to future period:* Costs which could not be recovered or charged in full during the concerned period should not be taken to a future period, for recovery. If past costs are included in the future period, they are likely to influence the future period and future results are likely to be distorted.

(6) *Principles of double entry should be applied wherever necessary:* Costing requires a greater use of cost sheets and cost statements for the purpose of cost ascertainment and cost control, but cost ledger and cost control accounts should be kept on double entry principle as far as possible.

#### **4. OBJECTIVES OF COST ACCOUNTING**

Cost accounting aims at systematic recording of expenses and analysis of the same so as to ascertain the cost of each product manufactured or service rendered by an organisation. Information regarding cost of each product or service would enable the management to know where to economise on costs, how to fix prices, how to maximise profits and so on. Thus, the main objects of cost accounting are the following:

- (1) To analyse and classify all expenditures with reference to the cost of products and operations.
- (2) To arrive at the cost of production of every unit, job, operation, process, department or service and to develop cost standard.
- (3) To indicate to the management any inefficiencies and the extent of various forms of waste, whether of materials, time, expenses or in the use of machinery, equipment and tools. Analysis of the causes of unsatisfactory results may indicate remedial measures.
- (4) To provide data for periodical profit and loss accounts and balance sheets at such intervals, e.g., weekly, monthly or quarterly, as may be desired by the management during the financial year, not only for the whole business but also by departments or individual products. Also, to explain in detail the exact reasons for profit or loss revealed in total, in the profit and loss account.
- (5) To reveal sources of economies in production having regard to methods, types of equipment, design, output and layout. Daily, weekly, monthly or quarterly information may be necessary to ensure prompt and constructive action.
- (6) To provide actual figures of cost for comparison with estimates and to serve as a guide for future estimates or quotations and to assist the management in their price-fixing policy.
- (7) To show, where standard costs are prepared, what the cost of production ought to be and with which the actual costs which are eventually recorded may be compared.

- (8) To present comparative cost data for different periods and various volumes of output and to provide guidance in the development of business. This is also helpful in budgetary control.
- (9) To record the relative production results of each unit of plant and machinery in use as a basis for examining its efficiency. A comparison with the performance of other types of machines may suggest the necessity for replacement.
- (10) To provide a perpetual inventory of stores and other materials so that interim profit and loss account and balance sheet can be prepared without stock taking and checks on stores and adjustments are made at frequent intervals. Also to provide the basis for production planning and for avoiding unnecessary wastages or losses of materials and stores.
- (11) Last but not the least, to provide information to enable management to make short-term decisions of various types, such as quotation of price to special customers or during a slump, make or buy decision, assigning priorities to various products, etc.

## 5. IMPORTANCE OF COST ACCOUNTING

The limitations of financial accounting have made the management to realise the importance of cost accounting. Whatever may be the type of business, it involves expenditure on labour, materials and other items required for manufacturing and disposing of the product. The management has to avoid the possibility of waste at each stage. It has to ensure that no machine remains idle, efficient labour gets due incentive, by-products are properly utilised and costs are properly ascertained. Besides the management, the creditors and employees are also benefited in numerous ways by installation of a good costing system. Cost accounting increases the overall productivity of an organisation and serves as an important tool, in bringing prosperity to the nation. Thus, the importance of cost accounting can be discussed under the following headings:

(a) *Costing as an Aid to Management*: Cost accounting provides invaluable aid to management. It provides detailed costing information to the management to enable them to maintain effective control over stores and inventory, to increase efficiency of the organisation and to check wastage and losses. It facilitates delegation of responsibility for important tasks and rating of employees. For all these, the management should be capable of using the information provided by cost accounts in a proper way. The various advantages derived by the management from a good system of costing are as follows:

1. *Cost accounting helps in periods of trade depression and trade competition* - In periods of trade depression, the organisation cannot afford to have losses which pass unchecked. The management must know the areas where economies may be sought, waste eliminated and efficiency increased. The organisation has to wage a war not only for its survival but also continued growth. The management should know the actual cost of their products before embarking on any scheme of price reduction. Adequate system of costing facilitates this.
2. *Cost accounting aids price fixation* - Although the law of supply and demand to a great extent determines the price of the article, cost to the producer does

play an important role. The producer can take necessary guidance from his costing records in case he is in a position to fix or change the price charged.

3. *Cost accounting helps in making estimates* - Adequate costing records provide a reliable basis for making estimates and quoting tenders.
4. *Cost accounting helps in channelising production on right lines* - Proper costing information makes it possible for the management to distinguish between profitable and non-profitable activities. Profits can be maximised by concentrating on profitable operations and eliminating non-profitable ones.
5. *Cost accounting eliminates wastages* - As cost accounting is concerned with detailed break-up of costs, it is possible to check various forms of wastages or losses.
6. *Cost accounting makes comparisons possible* - Proper maintenance of costing records provides various costing data for comparisons which in turn helps the management in formulation of future lines of action.
7. *Cost accounting provides data for periodical profit and loss account* - Adequate costing records provide the management with such data as may be necessary for preparation of profit and loss account and balance sheet at such intervals as may be desired by the management.
8. *Cost accounting helps in determining and enhancing efficiency* - Losses due to wastage of materials, idle time of workers, poor supervision, etc., will be disclosed if the various operations involved in the production are studied carefully. Efficiency can be measured, costs controlled and various steps can be taken to increase the efficiency.
9. *Cost accounting helps in inventory control* - Cost accounting furnishes control which management requires in respect of stock of materials, work-in-progress and finished goods.

(b) *Costing as an Aid to Creditors* - Investors, banks and other money lending institutions have a stake in the success of the business concern and are, therefore, benefited immensely by the installation of an efficient system of costing. They can base their judgment about the profitability and future prospects of the enterprise on the costing records.

(c) *Costing as an Aid to Employees* - Employees have a vital interest in their employer's enterprise in which they are employed. They are benefited by a number of ways by the installation of an efficient system of costing. They are benefited, through continuous employment and higher remuneration by way of incentives, bonus plans, etc.

(d) *Costing as an Aid to National Economy* - An efficient system of costing brings prosperity to the business enterprise which in turn results in stepping up of the government revenue. The overall economic development of a country takes place as a consequence increase in efficiency of production. Control of costs, elimination of wastages and inefficiencies led to the progress of the industry and, in consequence of the nation as a whole.

## 6. CLASSIFICATION OF COSTS

The different bases of cost classification are:

- (1) By time (historical, pre-determined).

- (2) By nature or elements (material, labour and overhead).
- (3) By degree of traceability to the product (direct, indirect).
- (4) Association with the product (product, period).
- (5) Changes in activity or volume (fixed, variable, semivariable).
- (6) By function (manufacturing, administrative, selling, research and development, pre-production).
- (7) Relationship with accounting period (capital, revenue).
- (8) Controllability (controllable, non-controllable).
- (9) Cost for analytical and decision-making purposes (opportunity, sunk, differential, joint, common, imputed, out-of-pocket, marginal, uniform, replacement).
- (10) Others (conversion, traceable, normal, avoidable, unavoidable, total).

### 6.1 Classification on the Basis of Time

- (a) *Historical Costs*: These costs are ascertained after they are incurred. Such costs are available only when the production of a particular thing has already been done. They are objective in nature and can be verified with reference to actual operations.
- (b) *Pre-determined Costs*: These costs are calculated before they are incurred on the basis of a specification of all factors affecting cost. Such costs may be:
  - (i) *Estimated costs*: Costs are estimated before goods are produced; these are naturally less accurate than standards.
  - (ii) *Standard costs*: This is a particular concept and technique. This method involves:
    - (a) setting up predetermined standards for each element of cost and each product;
    - (b) comparison of actual with standard to find variation;
    - (c) pin-pointing the causes of such variances and taking remedial action.

Obviously, standard costs, though pre-determined, are arrived with much greater care than estimated costs.

### 6.2 By Nature or Elements

There are three broad elements of costs:

- (1) *Material*: The substance from which the product is made is known as material. It can be direct as well as indirect.

*Direct material*: It refers to those materials which become a major part of the finished product and can be easily traceable to the units. Direct materials include:

  - (i) All materials specifically purchased for a particular job/process.
  - (ii) All material acquired and latter requisitioned from stores.
  - (iii) Components purchased or produced.
  - (iv) Primary packing materials.
  - (v) Material passing from one process to another.

*Indirect material:* All material which is used for purposes ancillary to production and which can be conveniently assigned to specific physical units is termed as indirect materials. Examples, oil, grease, consumable stores, printing and stationary material etc.

- (2) *Labour:* Labour cost can be classified into direct labour and indirect labour.

*Direct labour:* It is defined as the wages paid to workers who are engaged in the production process whose time can be conveniently and economically traceable to units of products. For example, wages paid to compositors in a printing press, to workers in the foundry in cast iron works etc.

*Indirect labour:* Labour employed for the purpose of carrying tasks incidental to goods or services provided, is indirect labour. It cannot be practically traced to specific units of output. Examples, wages of store-keepers, foreman, time-keepers, supervisors, inspectors etc.

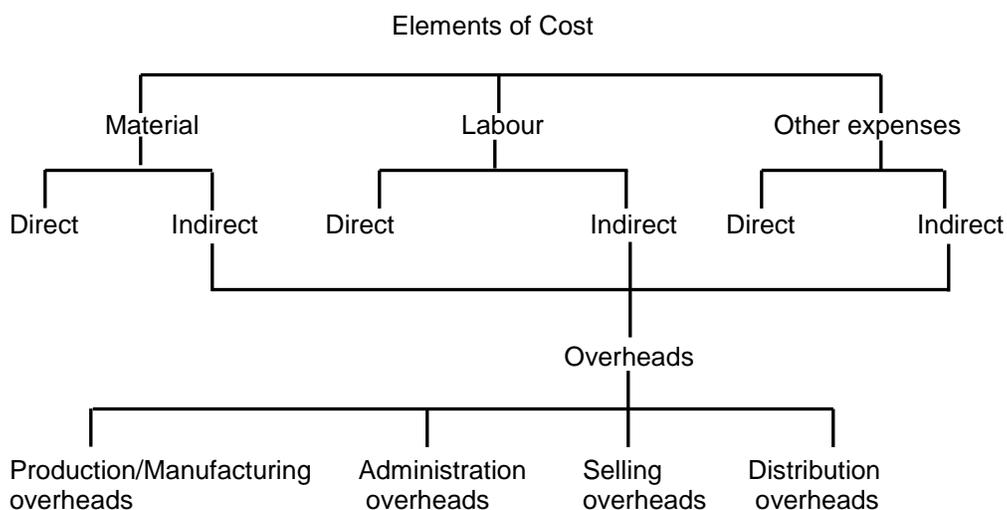
- (3) *Expenses:* Expenses may be direct or indirect.

*Direct expenses:* These expenses are incurred on a specific cost unit and identifiable with the cost unit. Examples are cost of special layout, design or drawings, hiring of a particular tool or equipment for a job; fees paid to consultants in connection with a job etc.

*Indirect expenses:* These are expenses which cannot be directly, conveniently and wholly allocated to cost centre or cost units. Examples are rent, rates and taxes, insurance, power, lighting and heating, depreciation etc.

It is to be noted that the term overheads has a wider meaning than the term indirect expenses. Overheads include the cost of indirect material, indirect labour and indirect expenses. overheads may be classified as (a) production or manufacturing overheads, (b) administration overheads, (c) selling overheads, and (d) distribution overheads.

The various elements of cost can be illustrated by the following chart:



### 6.3 By Degree of Traceability to the Products

Cost can be distinguished as direct and indirect.

Costs which can be easily traceable to a product or some specific activity are called direct costs. Indirect costs are difficult to trace to a single product or it is uneconomic to do so. They are common to several products, e.g. salary of a factory manager.

Costs may be direct or indirect with respect to a particular division or department. For example, all the costs incurred in the Power House are indirect as far as the main product is concerned but as regards the Power House itself, the fuel cost or supervisory salaries are direct. It is necessary to know the purpose for which cost is being ascertained and whether it is being associated with a product, department or some activity.

Indirect costs have to be apportioned to different products, if appropriate measurement techniques are not available. These may involve some formula or base which may not be totally correct or exact.

### 6.4 Association with the Product

Cost can be classified as product costs and period costs.

*Product Costs:* Product costs are those which are traceable to the product and included in inventory values. In a manufacturing concern it comprises the cost of direct materials, direct labour and manufacturing overheads. Product cost is a full factory cost. Product costs are used for valuing inventories which are shown in the balance sheet as asset till they are sold. The product cost of goods sold is transferred to the cost of goods sold account.

*Period Costs:* Period costs are incurred on the basis of time such as rent, salaries, etc., include many selling and administrative costs essential to keep the business running. Though they are necessary to generate revenue, they are not associated with production, therefore, they cannot be assigned to a product. They are charged to the period in which they are incurred and are treated as expenses.

Selling and administrative costs are treated as period costs for the following reasons:

- (i) Most of these expenses are fixed in nature.
- (ii) It is difficult to apportion these costs to products equitably.
- (iii) It is difficult to determine the relationship between such cost and the product.
- (iv) The benefits accruing from these expenses cannot be easily established.

The net income of a concern is influenced by both product and period costs. Product costs are included in the cost of the product and do not affect income till the product is sold. Period costs are charged to the period in which they are incurred.

### 6.5 By Changes in Activity or Volume

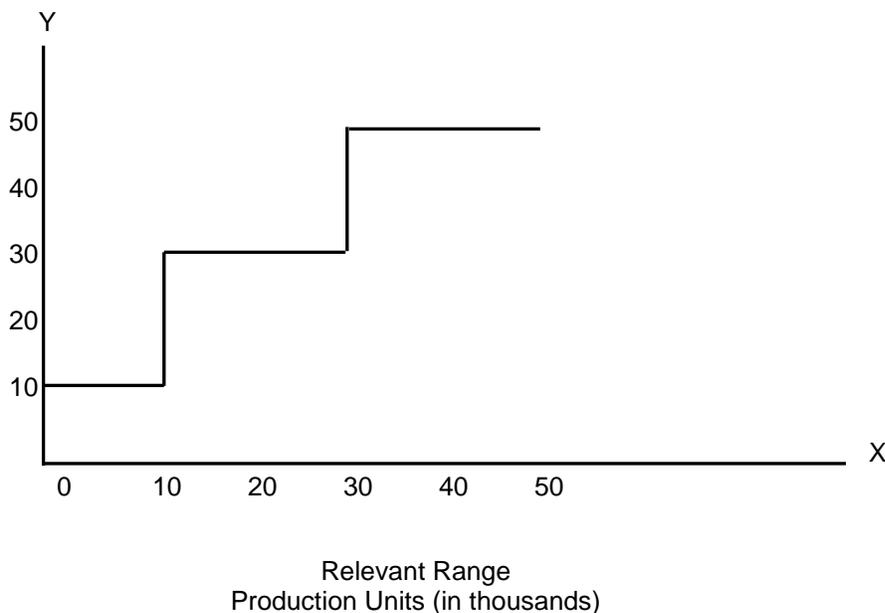
Costs can be classified as fixed, variable and semi-variable cost.

*Fixed costs:* The Chartered Institute of Management Accountants, London, defines fixed cost as “ the cost which is incurred for a period, and which, within certain output and turnover limits, tends to be unaffected by fluctuations in the levels of activity (output or turnover)”.

These costs are incurred so that physical and human facilities necessary for business operations, can be provided. These costs arise due to contractual obligations and management decisions. They arise with the passage of time and not with production and are expressed in terms of time. Examples are rent, property-taxes, insurance, supervisors' salaries etc.

It is wrong to say that fixed costs never change. These costs may vary depending on the circumstances. The term fixed refer to non-variability related to the relevant range. Fixed cost can be classified into the following categories for the purpose of analysis:

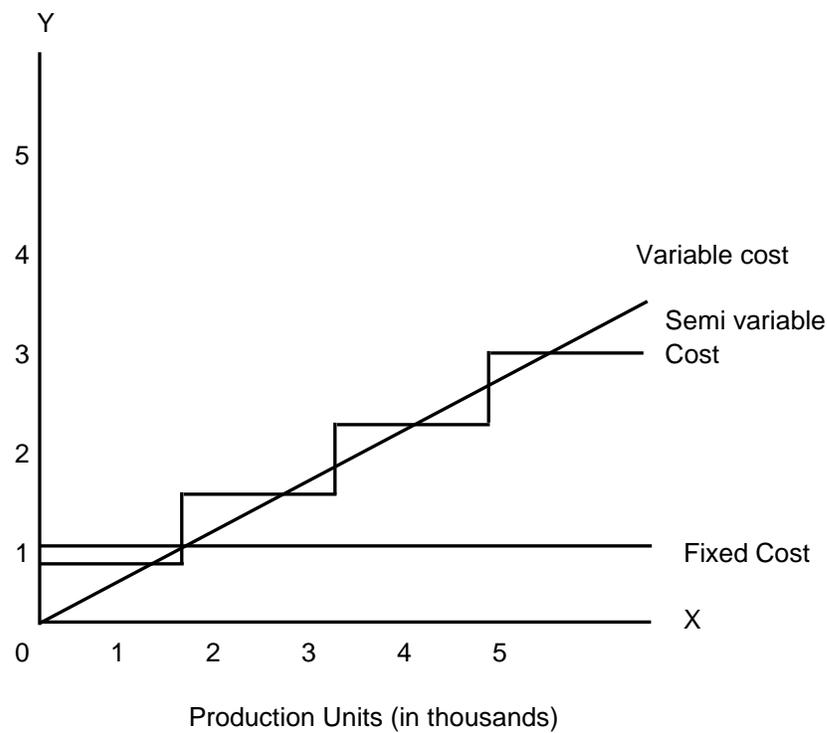
- (a) *Committed costs:* These costs are incurred to maintain certain facilities and cannot be quickly eliminated. The management has little or no discretion in this cost, e.g., rent, insurance etc.
- (b) *Policy and managed costs:* Policy costs are incurred for implementing particular management policies such as executive development, housing, etc. Such costs are often discretionary. Managed costs are incurred to ensure the operating existence of the company e.g., staff services.
- (c) *Discretionary costs:* These are not related to the operations and can be controlled by the management. These costs result from special policy decisions, new researches etc., and can be eliminated or reduced to a desirable level at the discretion of the management.
- (d) *Step costs:* Such costs are constant for a given level of output and then increase by a fixed amount at a higher level of output.



*Variable cost:* Variable costs are those costs that vary directly and proportionately with the output e.g. direct materials, direct labour. It should be kept in mind that the variable cost per unit is constant but the total cost changes corresponding to the levels of output. It is always expressed in terms of units, not in terms of time.

Management decisions can influence the cost behaviour patterns. The concept of variability is relative. If the conditions upon which variability was determined changes, the variability will have to be determined again.

*Semi-fixed (or semi-variable) costs:* Such costs contain fixed and variable elements. Because of the variable element, they fluctuate with volume and because of the fixed element, they do not change in direct proportion to output. Semi-variable costs change in the same direction as that of the output but not in the same proportion. Depreciation is an example; for two shift working the total depreciation may be only 50% more than that for single shift working. They may change with comparatively small changes in output but not in the same proportion.



## 6.6 Functional Classification of Costs

A company performs a number of functions. Functional costs may be classified as follows:

- (a) *Manufacturing/production costs:* It is the cost of operating the manufacturing division of an undertaking. It includes the cost of direct materials, direct

labour, direct expenses, packing (primary) cost and all overhead expenses relating to production.

- (b) *Administration costs*: They are indirect and covers all expenditure incurred in formulating the policy, directing the organisation and controlling the operation of a concern, which is not related to research, development, production, distribution or selling functions.
- (c) *Selling and distribution cost*: Selling cost is the cost of seeking to create and stimulate demand e.g. advertisements, market research etc. Distribution cost is the expenditure incurred which begins with making the package produced available for dispatch and ends with making the reconditioned packages available for re-use e.g. warehousing, cartage etc. It includes expenditure incurred in transporting articles to central or local storage. Expenditure incurred in moving articles to and from prospective customers as in the case of goods on sale or return basis is also distribution cost.
- (d) *Research and development costs*: They include the cost of discovering new ideas, processes, products by experiment and implementing such results on a commercial basis.
- (e) *Pre-production cost*: When a new factory is started or when a new product is introduced, certain expenses are incurred. There are trial runs. Such costs are termed as pre-production costs and treated as deferred revenue expenditure. They are charged to the cost of future production.

### 6.7 Relationships with Accounting Period

Costs can be capital and revenue.

Capital expenditure provides benefit to future period and is classified as an asset. On the other hand, revenue expenditure benefits only the current period and is treated as an expense. As and when an asset is written off, capital expenses to that extent becomes cost. Only when capital and revenue is properly differentiated, the income of a particular period can be correctly determined. It is not possible to distinguish between the two under all circumstances.

### 6.8 Controllability

Cost can be Controllable and Non-Controllable.

*Controllable cost*: The Chartered Institute of Management Accountants, defines controllable cost as “cost which can be influenced by its budget holder”.

*Non-Controllable cost* is the cost which is not subject to control at any level of managerial supervision.

The difference between the terms is very important for the purpose of cost accounting, cost control and responsibility accounting.

A controllable cost can be controlled by a person at a given organisational level. Controllable cost are not totally controllable. Some costs are partly controllable by one person and partly by another e.g., maintenance cost can be controlled by both the production and maintenance manager. The term “controllable costs” is often used to mean variable costs and non-controllable costs as fixed.

Belkaoni has mentioned the following fallacies about controllable costs:

- (i) All variable costs are controllable and fixed are not.
- (ii) All direct costs are controllable and indirect costs are not.
- (iii) All long-term costs are controllable.

Sometimes the time factor and the decision making authority can make a cost controllable. If the time period is long enough, all costs can be controlled. Proper delegation helps in establishing clear responsibility and controllability. But all costs can be controlled by one or another person. The authority and responsibility of cost control is delegated to different levels, though the managing director is responsible for all the costs.

### 6.9 Costs for Analytical and Decision Making Purposes

- (a) *Opportunity costs*: Opportunity cost is the cost of selecting one course of action and the losing of other opportunities to carry out that course of action. It is the amount that can be received if the asset is utilised in its next best alternative.

Edwards, Hermanson and Salmonson define it as “the benefits lost by rejecting the best competing alternative to the one chosen. The benefit lost is usually the net earnings or profit that might have been earned from the rejected alternative”

*Example*: Capital is invested in plant and machinery. It cannot be now invested in shares or debentures. The loss of interest and dividend that would be earned is the opportunity cost. Another example is when the owner of a business foregoes the opportunity to employ himself elsewhere.

Opportunity costs are not recorded in the books. It is important in decision making and comparing alternatives.

- (b) *Sunk costs*: A sunk cost is one that has already been incurred and cannot be avoided by decisions taken in the future. As it refers to past costs, it is called unavoidable cost. The National Association of Accountants (USA) defines a sunk cost as “an expenditure for equipment or productive resources which has no economic relevance to the present decision making process”. This cost is not useful for decision making as all past costs are irrelevant. CIMA defines it as the past cost not taken into account in decision making.

It has also been defined as the difference between the purchase price of an asset and its salvage value.

- (c) *Differential cost*: Differential cost has been defined as “the difference in total cost between alternatives, calculated to assist decision making”. Differential cost is the increase or decrease in total costs resulting out of:
- (a) Producing and distributing a few more or few less of products;
  - (b) A change in the method of production/distribution;
  - (c) An addition or deletion of a product or a territory; and
  - (d) The selection of an additional sales channel.

The differential cost between any two levels of production is the difference between the marginal costs at these two levels and the increase or decrease in fixed costs, if any. These costs are usually ‘specific purpose

costs' as they are determined for a particular purpose and under specific circumstances.

Incremental cost measures the addition in unit cost for an addition in output. This cost need not be the same at all levels of production. It is usually expressed as a cost per unit whereas the differential cost is measured in total. The former applies to increase in production and is restricted to the cost only, whereas the differential cost has a comprehensive meaning and application in the sense that it denotes both increase or decrease.

Differential costs is useful in planning and decision making and helps to choose the best alternative. It helps management to know the additional profit that would be earned if idle capacity is used or when additional investments are made.

- (d) *Joint costs*: The processing of a single raw material results in two or more different products simultaneously. The joint products are not identifiable as different types of product until a certain stage of production known as the split-off point is reached. Joint costs are the costs incurred upto the point of separation. One product may be of major importance and others of minor importance which are called by-products.

*Bierman and Djckman* define it as: "Joint costs relate to a situation in which the factors of production by their basic nature result in two or more products. The jointness results from there being more than one product, and these multi-products are the result of the methods of production or the nature of raw material and not of a decision by management to produce both".

*The National Association of Accountants* defines it as follows:

"Joint costs relate to two or more products produced from a common production process or element-material, labour or overhead or any combination thereof or so locked together that one cannot be produced without producing the other".

Joint costs can be apportioned to different products only by adopting a suitable basis of apportionment.

- (e) *Common costs*: Common costs are those costs which are incurred for more than one product, job, territory or any other specific costing object. They are not easily related with individual products and hence are generally apportioned.

The National Association of Accountants defines the term as "the cost of services employed in the creation of two or more outputs which is not allocable to those outputs on a clearly justified basis".

It should be kept in mind that management decisions influence the incurrence of common costs e.g. rent of the factory is a common cost to all departments located in factory.

- (f) *Imputed costs*: Some costs are not incurred and are useful while taking decision pertaining to a particular situation. These costs are known as imputed or notional costs and they do not enter into traditional accounting systems.

*Examples:* Interest on internally generated funds, salaries of owners of proprietorship or partnership, notional rent etc.

- (g) *Out-of-pocket costs:* Out-of-pocket costs signifies the such outlay required for an activity. The management would like to know that the income from a particular project will at least cover the expenditure for the project. Acceptance of a special order requires to be considered as additional costs need not be incurred if the special order is not accepted. Hence the importance of out-of-pocket costs.
- (h) *Uniform costs:* They are not distinct costs as such. Uniform costing signifies common costing principles and procedures adopted by a number of firms. They are useful in inter-firm comparison.
- (i) *Marginal costs:* It is the aggregate of variable costs, i.e., prime cost plus variable overheads. Thus, costs are classified as fixed and variable.
- (j) *Replacement costs:* This is the cost of replacing an asset at current market values e.g. when the cost of replacing an asset is considered, it means the cost of purchasing the asset at the current market price is important and not the cost at which it was purchased.

### 6.10 Other Costs

(i) *Conversion cost:* It is the cost of a finished product or work-in-progress comprising direct labour and manufacturing overhead. It is production cost less the cost of raw material but including the gains and losses in weight or volume of direct material arising due to production.

(ii) *Normal cost:* This is the cost which is normally incurred at a given level of output in the conditions in which that level of output is achieved.

(iii) *Traceable cost:* It is the cost which can be easily associated with a product, process or department.

(iv) *Avoidable costs:* Avoidable costs are those costs which under the present conditions need not have been incurred.

*Example:* (a) Spoilage in excess of normal limit; (b) Unfavourable cost variances which could have been controlled.

(v) *Unavoidable costs:* Unavoidable costs are those costs which under the present conditions must be incurred.

(vi) *Total cost:* This is the sum of all costs associated to a particular unit, or process, or department or batch or the entire concern. It may also mean the sum total of material, labour and overhead. The term total cost however, is not precise, it needs to be made precise by using terms that indicate the elements of cost included.

(vii) *Value added:* Strictly, it is not cost. It means the selling price of the product/service less the cost of materials used in the product or the service. Often depreciation is also deducted for ascertaining "value added".

## 7. COST CENTRE AND COST UNIT

A cost accountant has to ascertain cost by cost centre or cost unit or by both.

### 7.1 Cost Centre

According to the Chartered Institute of Management Accountants, London, cost centre means, "a production or service location, function, activity or item of equipment whose costs may be attributed to cost units". Cost centre is the smallest organisational sub-unit for which separate cost collection is attempted. Thus cost centre refers to one of the convenient unit into which the whole factory organisation has been appropriately divided for costing purposes. Each such unit consists of a department or a sub-department or item of equipment or, machinery or a person or a group of persons. For example, although an assembly department may be supervised by one foreman, it may contain several assembly lines. Sometimes each assembly line is regarded as a separate cost centre with its own assistant foreman. Take another example, in a laundry, activities such as collecting, sorting, marketing and washing of clothes are performed. Each activity may be considered as a separate cost centre and all costs relating to a particular cost centre may be found out separately.

Cost centres may be classified as follows :

(i) *Productive, unproductive and mixed cost centres*: Productive cost centres are those which are actually engaged in making the products - the raw materials are handled here and converted into saleable products. In such centres both direct and indirect costs are incurred, machine shops, welding shops, and assembly shops are examples of production cost centres in an engineering factory. Service or unproductive cost centres do not make the products but are essential aids to the productive centres. Examples of such service centres are those of administration, repairs and maintenance, stores and drawing office departments. Mixed cost centres are those which are engaged some on productive and other lines on service works. For instance, a tool shop serves as a productive cost centre when it manufactures dies and jigs for specific order, but serves as servicing cost centre when it does repairs for the factory.

(ii) *Personal and impersonal cost centre*: A personal cost centre consists of a person or a group of persons. An impersonal cost centre is one which consists of a department, plant or item of equipment (or group of these).

(iii) *Operation and process cost centre*: In case a cost centre consists of those machines and/or persons which carry out the same operation is termed as operation cost centre. If a cost centre consists of a continuous sequence of operations it is called process cost centre.

The determination of a suitable cost centre is very important for ascertainment and control of cost. The manager in charge of a cost centre is held responsible for control of cost of his cost centre.

### 7.2 Cost Unit

The Chartered Institute of Management Accountants, London, defines a unit of

cost as “a unit of product or service in relation to which costs are ascertained”. A cost unit is a devise for the purpose of breaking up or separating costs into smaller sub-divisions. These smaller sub-divisions are attributed to products or services to determine product cost or service cost or cost of time spent for a particular job etc. We may for instance determine the cost per ton of steel, per tonne kilometre of a transport service or cost per machine hour. The forms of measurement used as cost units are usually the units of physical measurements like number, weight, area, length, value, time etc. Unit selected should be unambiguous, simple and commonly used. Following are some examples of cost unit:

<i>Industry/Product</i>	<i>Cost unit</i>
Automobile	Number
Brick works	1000 bricks
Cement	Tonne
Transport	Tonne - Kilometre
	Passenger - Kilometre
Chemicals	Litre, gallon, kilogramme, tonne
Steel	Tonne
Sugar	Tonne

The selection of suitable cost centres or cost units for which costs are to be ascertained in an undertaking depends upon a number of factors which are listed as follows:

- (i) Organisation of the factory.
- (ii) Conditions of incidence of cost.
- (iii) Requirements of the costing system i.e. suitability of the units of centres for cost purposes.
- (iv) Availability of information.
- (v) Management policy regarding making a particular choice from several alternatives.

## **8. TECHNIQUES OF COSTING**

The following techniques of costing are used by the management for controlling costs and making managerial decisions:

### **8.1 Historical (or Conventional) Costing**

It refers to the determination of costs after they have been actually incurred. It means that cost of a product can be calculated only after its production. This system is useful only for determining costs, but not useful for exercising any control over costs. It can serve as a guidance for future production only when conditions continue to be the same in future.

### **8.2 Standard Costing**

It refers to the preparation of standard costs and applying them to measure the variations from standard costs and analysing the variations with a view to maintain maximum efficiency in production. What is done in this case is that costs of each

article are determined before-hand under current and anticipated conditions, but sometimes they are determined before-hand under normal or ideal conditions. Then actual costs are compared with the pre-determined costs and deviations known as variances are noted down. Thereafter, the reasons for the variances are ascertained and necessary steps are taken to prevent their recurrence.

### **8.3 Marginal Costing**

It refers to the ascertainment of marginal costs by differentiating between fixed costs and variable costs and the effect on profit of the changes in volume or type of output. In this case, only the variable costs are charged to products or operations while fixed costs are charged to profit and loss account of the period in which they arise.

### **8.4 Uniform Costing**

A technique where standardized principles and methods of cost accounting are employed by a number of different companies and firms, is termed as uniform costing. This helps in comparing performance of one firm with that of another.

### **8.5 Direct Costing**

The practice of charging all direct costs to operations, process or products leaving all indirect costs to be written off against profits in the period in which they arise, is termed as direct costing.

### **8.6 Absorption Costing**

The practice of charging all costs both variable and fixed to operation, process or products or process is termed as absorption costing.

### **8.7 Activity Based Costing**

In a business organization, Activity-Based Costing (ABC) is a method of assigning the organization's resource costs through activities to the products and services provided to its customers. It is defined as a technique of cost attribution to cost units on the basis of benefits received from indirect activities, e.g. ordering, setting up, assuring quality. ABC involves identification of costs with each cost driving activity and making it as the basis of apportionment of costs over different products or jobs on the basis of the number of activities required for their completion. It is basically used for apportionment of overheads costs in an organisation having products that differ in volume and complexity of production. Under this technique, the overhead costs of the organisation are identified with each activity which is acting as a cost driver i.e. the the cause for incurrance of overhead cost. Such cost drivers may be purchase orders issued, quality inspections, maintainance requests, material receipts, inventory movements, power consumed, machine time, etc. Having identified the overhead costs with each cost centre, cost per unit of cost driver can be ascertained. The overhead costs can be assigned to jobs on the basis of number of activities required for their completion. This is generally used as a tool for understanding product and customer cost and profitability. As such, ABC has predominately been used to support strategic decisions such as pricing, outsourcing and identification and measurement of process improvement initiatives.

ABC principles are used: (i) to focus management attention on the total cost to produce a product or service, and (ii) as the basis for full cost recovery. Support services are particularly suitable for activity-based resourcing because they produce identifiable and measurable units of output.

Activity-Based Costing encourages managers to identify which activities are value added—those that will best accomplish a mission, deliver a service, or meet a customer demand. It improves operational efficiency and enhances decision-making through better, more meaningful cost information.

## **9. METHODS OF COSTING**

The general fundamental principles of ascertaining costs are the same in every system of cost accounting, but the methods of analysis and presenting the costs vary from industry to industry. Different methods are used because business enterprises vary in their nature and in the type of products or services they produce or render.

### **9.1 Job Costing**

It refers to a system of costing in which costs are ascertained in terms of specific jobs or orders which are not comparable with each other. Industries where this method of costing is generally applied are printing press, automobile garage, repair shop, ship-building, house building, engine and machine construction, etc.

### **9.2 Contract Costing**

Although contract costing does not differ in principle from job costing, it is convenient to treat contract cost accounts separately. The term is usually applied to the costing method adopted where large scale contracts at different sites are carried out, as in the case of building construction.

### **9.3 Batch Costing**

This method is also a type of job costing. A batch of similar products is regarded as one job and the cost of this complete batch is ascertained. It is then used to determine the unit cost of the articles produced. It should, however, be noted that the articles produced should not lose their identity in manufacturing operations.

### **9.4 Terminal Costing**

This method is also a type of job costing. This method emphasises the essential nature of job costing, i.e. the cost can be properly terminated at some point and related to a particular job.

### **9.5 Operation Costing**

This method is adopted when it is desired to ascertain the cost of carrying out an operation in a department, for example, welding. For large undertakings, it is frequently necessary to ascertain the cost of various operations.

### **9.6 Process Costing**

Where a product passes through distinct stages or processes, the output of one process being the input of the subsequent process, it is frequently desired to

ascertain the cost of each stage or process of production. This is known as process costing. This method is used where it is difficult to trace the item of prime cost to a particular order because its identity is lost in volume of continuous production. Process costing is generally adopted in textile industries, chemical industries, oil refineries, soap manufacturing, paper manufacturing, tanneries, etc.

### **9.7 Unit or Single or Output or Single-output Costing**

This method is used where a single article is produced or service is rendered by continuous manufacturing activity. The cost of whole production-cycle is ascertained as a process or series of processes and the cost per unit is arrived at by dividing the total cost by the number of units produced. The unit of costing is chosen according to the nature of the product. Cost statements or cost sheets are prepared under which various items of expenses are classified and the total expenditure is divided by total quantity produced in order to arrive at unit cost of production. This method is suitable in industries like brick-making, collieries, flour mills, cement manufacturing, etc. This method is useful for the assembly department in a factory producing a mechanical article e.g., bicycle.

### **9.8 Operating Costing**

This method is applicable where services are rendered rather than goods produced. The procedure is same as in the case of single output costing. The total expenses of the operation are divided by the units and cost per unit of service is arrived at. This method is employed in railways, road transport, water supply undertakings, telephone services, electricity companies, hospital services, municipal services, etc.

### **9.9 Multiple or Composite Costing**

Some products are so complex that no single system of costing is applicable. It is used where there are a variety of components separately produced and subsequently assembled in a complex production. Total cost is ascertained by computing component costs which are collected by job or process costing and then aggregating the costs through use of the single or output costing system. This method is applicable to manufacturing concerns producing motor cars, aeroplanes, machine tools, type-writers, radios, cycles, sewing machines, etc.

### **9.10 Departmental Costing**

When costs are ascertained department by department, the method is called "Departmental Costing". Usually, for ascertaining the cost of various goods or services produced by the department, the total costs will have to be analysed, say, by the use of job costing or unit costing.

## **10. INSTALLATION OF A COSTING SYSTEM**

A cost accounting system is a system that accumulates costs, assigns them to cost objectives and reports cost information. It ascertains product profitability and helps management in planning and control of business operations.

A system has to be designed to suit the needs of an organisation. Costing can be

employed in any industry whether it is manufacturing industry or other industries like public utility, public services, construction companies, agriculture, mining etc.

As a system designer, the cost accountant should be able to perceive the needs of the management at various levels and design such a system as will meet those needs promptly, effectively and efficiently. The “needs” are concerned with the following:

- (i) *The objective*: The system will naturally differ according to what is expected from the costing system. The system will be simple if the objective is merely to fix prices; it will have to provide detailed information if the aim is to measure efficiency, control, etc. If the law requires installation of the costing system, the legal requirements must obviously be kept in mind.
- (ii) *Decision-making points*: The levels of management which require information will determine the quantum and format of information that the costing system will have to provide. The periodicity of the various reports will be similarly determined.
- (iii) *Significant operations*: Costing must obviously pay greater attention to those areas which account for the bulk of expenditure. Mostly, it is production but, in quite a few cases, selling and distribution, accounts for greater expenditure than production; in such a case the system must devote greater care to selling and distribution.
- (iv) *Uncontrollable items*: Sometimes the law provides for a certain course of action; for example sugar must be packed in new gunny bags. Costing must not try to change this. Sometimes managements may decide to adopt a particular course for various reasons, for example, purchasing an item only from a particular firm. Obviously, it will be no use trying to alter this.

To install a sound costing system in an organisation is not an easy task. The costing for each firm must be so designed as to meet its earlier needs. It should be ensured first that the following pre-requisites for installing a sound costing system are present in the organisation:

- (a) The organisational set up should be clear cut regarding authority and responsibility of different individuals.
- (b) The management of the organisation should extend full support to the system.
- (c) The co-operation of the members of the staff and of the workers in general should be ensured. They should have the real spirit and enthusiasm to operate the system.
- (d) If financial records can yield all the necessary costing information, it is not necessary to have a separate costing department. Usually, however, a separate costing department is essential or desirable but its strength will depend upon the needs of the management and the volume and complexity of transactions or events to be recorded and handled.

The following are the essential considerations which would govern the installation of a sound costing in an organisation in general:

*Executive side:* The memorandum and articles, organisation chart, delegation of powers etc.

*Accounting side:* Financial accounting records, last audited accounts etc.

*Internal control side:* The existing forms, registers, number of copies etc.

*Technical side and Others:*

- (i) The size, layout and organisation of the factory should be studied.
- (ii) The methods of purchase, receipt, storage and issue of materials should be examined and modified if necessary.
- (iii) The method of paying wages should be studied.
- (iv) The management requirements and their attitude towards cost accounting should be kept in view.
- (v) The cost of installing and operating the system should be economical.
- (vi) The nature, method, process and stages of production, the quantities and qualities of each product should be examined.
- (vii) The system should suit the organisation.
- (viii) Forms and records should involve minimum clerical work and cost.
- (ix) The system should enable prompt reporting to the various levels of management.
- (x) The system should so designed that cost can be effectively controlled.
- (xi) The staff in the cost accounting department should have the ability to produce required cost data. The persons using the reports should be able to understand and use the information.
- (xii) The adoption of cost accounting systems and practices followed by other firms in the industry facilitates inter unit and inter-firm comparisons.
- (xiii) A suitable unit of cost should be selected so that the cost is meaningful. For example, in a steel mill, the unit is "tonne" and in a company producing refrigerators, the unit is each refrigerator. In a transport company, the unit is "tonne-km" i.e., the effort in hauling one tonne of goods for one kilometre.
- (xiv) External factors e.g. government regulations affect the frequency, volume and structure of the cost accounting system.

Any proposed changes should suit other departments and should dislocate production schedule. Other points to be noted are :

- (a) *Accuracy:* Cost accounts must be accurate and correct otherwise they will prove to be misleading.
- (b) *Equity:* Allocation of indirect expenses to a particular class of output, department or job should be fair and equitable.
- (c) *Simplicity:* As cost accountants are highly analytical, there is a tendency towards complexity. Needless, elaboration should be scrupulously avoided and care must be taken to keep them as simple as possible. Careful choice should be made of the cost unit i.e. the quantity for which cost will be computed e.g. a tonne of steel, a kg. of yarn etc.

- (d) *Elasticity*: The cost accounting system should be elastic and capable of adapting itself to altered circumstances.
- (e) *Comparability*: The records must be maintained in such a manner that the result of one period can be compared with the results of any other period. The records of the past must act as a guide for the future.
- (f) *Promptness*: Prompt recording of the relevant figures in analytical form is the sine qua non of costing. Arrangements should be made for the prompt supply of records by the various departments relating to raw material, stores, labour etc., and the data thus obtained, are promptly analysed and recorded.
- (g) *Observance of instructions*: The costing staff must carefully obey the instructions given to them and even slight deviations must be permitted.
- (h) *Periodical results*: In order to derive maximum benefit, it is advisable to have the results prepared periodically so that actual cost can be compared with estimated costs.
- (i) *Reconciliation with financial accounts*: The whole system should be so maintained as to make reconciliation with financial accounts easy and simple.

## 11. PRACTICAL DIFFICULTIES IN INSTALLING A COSTING SYSTEM

1. *Lack of support from top management*: Many a times, the cost accounting system is introduced without the support of the top management in all the functional areas. Even managing director or chairman often introduces such system without consulting the departmental heads. This results in opposition from the various managers as they consider it is an interference on their activities.

2. *Resistance from the existing staff*: The existing financial accounting staff may offer resistance to the cost accounting system because of a feeling of their being declared redundant under the new system.

3. *Non-cooperation at other levels of organisation*: The foreman, supervisors and other staff may also resent the additional paper work and may not co-operate in providing the basic data which is absolutely essential for the success of the system.

4. *Shortage of trained staff*: There may be shortage of cost accountants to handle the work of cost analysis, cost control and cost reduction. The work of the costing department can not be handled with the availability of trained staff.

5. *Heavy costs*: The costing system will involve heavy costs unless it has been suitably designed to suit specific requirements.

To overcome this difficulties the following points are suggested:

- 1. Before the installation of a costing system, there must be firm commitment to the system on the part of the top management.
- 2. The existing accounting staff should be impressed about the need to supplement the existing financial accounting system.
- 3. The employees should be properly educated regarding the benefits which can be obtained from such a system.
- 4. The existing staff working in the accounts department must be properly trained in costing methods and techniques.

5. The costing system should be installed and operated according to the requirements of a specific case, so that it may not entail heavy cost to the organisation.
6. There should be proper supervision after installation and continuous efforts on the part of the cost accountant to make the system successful and to achieve the desired objectives.

## **12. MANAGEMENT ACCOUNTING**

In every business enterprise, various transactions and events take place every day; sales are effected, purchases are made, expenses are met or incurred, payments are received and made, assets are sold and acquired. These events, arising out of the decisions and actions of management, exercise their effects and impact on the operational efficiency and position of the enterprise. Most of these transactions and events have money values or can be measured and expressed in money values. Since they affect the operation and position of the enterprise, they need to be measured, recorded, analysed and reported to the management, so that the management can evaluate their effect upon the enterprise.

As compared with financial accounting and cost accounting, management accounting is a later development. Management accounting links management with accounting. All such information that is useful to the management is the subject matter of management accounting. Any information required for decision making is the concern of management accounting. Management accounting, unlike financial accounting, provides information for internal users, though the basic data come from the same accounting system i.e., financial accounting and cost accounting systems.

Management accounting collects and provides accounting, cost accounting, economic and statistical information to the men at various managerial levels to assist them in the performance of managerial functions and their evaluations. It is the development and application of various techniques of recording, analysis, interpretation and presentation, making the financial, costing, and other data active and effective in the performance of managerial functions, viz., planning, decision-making and control. It should be noted that management accounting makes use of not only accounting techniques but also of statistical and mathematical techniques. Management accounting is forward looking and should, therefore, be able to treat economic information and data to make it suitable for use by the management.

### **12.1 Need for Management Accounting**

Modern enterprises are complex entities - large in size and activities wide spread. The evolution of the joint stock companies as a form of organising business, has resulted in the deviation of ownership from management in such enterprises. Owners have become external to the enterprise and professional management has emerged to run and look after the enterprise. Introduction of scientific management techniques resulted in the organisation of the business into functional and regional units and divisions. Delegation of authority and the decentralisation of decision-making process has necessitated the use of some mechanism of performance evaluation and responsibility accounting. Planning and decision-making is no more a matter of intuition, as was the case with owner managers of small enterprises. Control and supervision functions can no more be as personal as they could be in small organisations. It has become necessary to evolve a system of information that would

help the management to read, measure and check the pulse of each division and unit, so that their activities could be properly coordinated to achieve the objectives of the enterprise with utmost economy.

Development of cost accounting has, to a great extent, overcome the inadequacies of financial accounting. It emphasises upon cost structures of various activities and functions and thereby provides the management detailed information for the purpose of decision-making and control. But even costing, does not provide all that is required to meet the informational needs of managerial functions. Management accounting is a system of utilising financial, costing and other informations to assist modern management in the performance and evaluation of their functions: planning, coordinating, decision-making and control.

The service which a management accountant provides consists basically of collecting, analysing, interpreting and presenting information regarding past operations and current events, as well as projections of future events and results. Obviously, management accounting is meant to aid all levels of management. For this the management accountant will not only provide overall totals for the business as a whole but analyses such totals, as far as practicable, to demonstrate the contribution of each division or unit to the final result. The integration of data relating to the effort of various divisions as responsibility centres helps management to achieve proper coordination. And if, the data is presented in a form which suggests corrective action required to overcome inefficiencies, wastages and delays, the management can exercise its control function purposefully and effectively.

Another important area where the management accountant can be useful is in the measurement of available and utilized capacities of various divisions and functions within an enterprise. The management accountant by demonstrating the figures of profit being lost due to under utilization enables the management to plan and diversify profitably or to let-out the extra capacities. He should clearly demonstrate the effect of using alternative resources in alternative ways. With various tools and techniques in his kit-bag, the management accountant should be capable of analysing the financial implications of future developments. In this way, we find that the management accountant by doing the necessary spadework feeds the management with precise and relevant information to enable them to perform their functions more effectively. He designs the framework of the financial and cost control reports that provide each managerial level with the most useful data and at the most appropriate time. He educates the executives the need for control, information and the ways of using it.

## **12.2 Definition of Management Accounting**

The management accounting team of *Anglo-American Council on Productivity* defined management accounting as:

“The presentation of accounting information in such a way as to assist management in the creation of policy and in day to day operation of an understanding”.

*American Accounting Association* defines management accounting as under:

“The application of appropriate techniques and concepts in processing historical

and projected economic data of an entity to assist management in establishing plans for reasonable economic objectives and in the making of rational decisions with a view towards these objectives”.

*J Batty defines:*

“Management accounting is the term used to describe accounting methods, systems and techniques which coupled with special knowledge and ability, assists management in its task of maximising profits or minimising losses.”

*Brown and Howard define:*

“Management accounting is that aspect of accounting which is concerned with the efficient management of a business through the presentation of management of such information as will facilitate efficient and opportune planning and control.”

*Robert Anthony has defined management accounting thus:*

“Management accounting is concerned with accounting information which is useful to management”

According to *CIMA, London*: “Management accounting is an integral part of management concerned with identifying, presenting and interpreting information used for: (a) formulating strategy; (b) planning and controlling activities; (c) decision taking; (d) optimising the use of resources; (e) disclosure to shareholders and others external to the entity; (f) disclosure to employees; (g) safeguarding assets.

The above involves participation in management to ensure that there is effective: (i) formulation of plans to meet objectives (strategic planning); (ii) formulation of short-term operation plans (budgeting/profit; planning); (iii) acquisition and use of finance (financial management) and recording of transaction (financial accounting and cost accounting); (iv) communication of financial and operating information; (v) corrective action to bring plans and results into line (financial control); (vi) reviewing and reporting on systems and operations (internal audit, management audit).”

If the meaning of ‘managing’ and ‘accounting’ are understood, the definition of management accounting becomes quite clear. The main objective of the management is to manage the company following a managing pattern comprised of formulation of plan, allocation of responsibilities for implementing the plan, organising procedures to assist in the execution of the plan, and control of the performance. To assist in this process, the accounting system provides to the management the following information viz. (1) data designed to assist in the formulation of a plan covering all business functions, (2) transform the project in quantitative terms with sources available to finance the project costs; (3) devise workable standards of performance matching to the responsibilities and measure the performance and assist in the revision/modification of the plan.

An analysis of the above definitions enables us to define management accounting as the processing and presenting of accounting, cost accounting and other economic data, both historical and projected, in such a way as would assist in the performance evaluation of managerial functions, viz. planning, decision-making and control. Processing and presenting of the data involves the use of techniques of

cost accounting, budgetary control, standard costing, break-even analysis, ratio-analysis, funds and cash flow analysis, etc.

### 13. NATURE OF MANAGEMENT ACCOUNTING

The following aspects are considered as the nature of management accounting:

- (i) *Management accounting is a decision making system:* Management accounting provides accounting information in such a way as to assist management in the creation of policy and in the day-to-day operations. Though management accountant is not taking any decision but provides data which is helpful to management in decision making. It communicates a great variety of facts in a systematic and meaningful manner.
- (ii) *Management accounting is futuristic:* Management accounting unlike the financial accounting, deals with the future. It helps in planning the future-because decisions are always taken for the future course of action. In the decision making process management accounting provides selective and fruitful information out of the data collected.
- (iii) *Management accounting is a technique of selective nature:* Management accountant takes into account only those data from the financial statement and communicates to the management which is useful for taking decisions.
- (iv) *Management accounting analyses different variables:* Management accounting helps in analysing the reasons for variations in profit as compared to the past period. It analyses the effects of different variables on the profits and profitability of the concern.
- (v) *Management accounting does not set particular formats for information:* It provides necessary information to the management in the form which may be more useful to the management in taking various decisions on different aspects of the business.

### 14. SCOPE OF MANAGEMENT ACCOUNTING

Management accounting includes financial accounting and extends to the operation of a system of cost accountancy, budgetary control and statistical data. While meeting the legal and conventional requirements regarding the presentation of financial statements, (profit and loss account, balance sheet and cash flow statements) it stresses emphasis upon the establishment and operation of internal controls. The scope of management accounting, *inter alia* includes:

1. Formation, installation and operation of accounting, cost accounting, tax accounting and information systems. Management accountant has to construct and reconstruct these systems to meet the changing needs of management functions.
2. The compilation and preservation of vital data for management planning. The accounts and the document files are repository of vast quantities of details about the past progress of the enterprise, without which forecasts of the future is very hazardous for the enterprise. The management accountant presents the past data in such a way as to reflect the trends of events to the management. He is supposed to give his assessment of anticipated changes in relevant areas. Such information provides effective assistance in the planning process. At times the management accountant may be called upon

to associate with and even supervise the actual planning process alongwith other members of the management team.

3. Providing means of communicating management plans to the various levels of organisation. This, on the one hand ensures the coordination of various segments of the enterprise plans and on the other defines the role of individual segments in the whole plan and assists the management in directing their activities.
4. Providing and installing an effective system of feed-back reports. This would enable the management in its controlling function. By pin-pointing the significant deviations between actual and expected activities, and by adhering to the principles of selectivity and relevance, such reports help in the installation and operation of the system of 'management by exceptions'. The management accountant is expected to analyse the deviation by reasons and responsibility and to suggest appropriate corrective measures in deserving cases.
5. Analysing and interpreting accounting and other data to make it understandable and usable to the management. It is only through such analysis and clarification that the management is enabled to place the various data and figures in proper perspective in the performance of its functions. Such analysis assists management in the location of responsibilities and to effect necessary changes in the organisational set up to achieve the objectives of the enterprise in a more efficient manner.
6. Assisting management in decision-making by (a) providing relevant accounting, other data and (b) analysing the effect of alternative proposals on the profits and position of the enterprise. Management accountant helps the management in a proper understanding and analysis of the problem in hand and presentation of factual information obviously in financial terms.
7. Providing methods and techniques for evaluating the performance of the management in the light of the objectives of the enterprises, thus assisting in the implementation of the principle of management by objectives.
8. Improving, modifying and sharpening the effectiveness of co-existing techniques of analysis. The management accountant should always think of increasing the practicability of existing techniques. He should be on the lookout for the development of new techniques as well.

Thus, management accounting serves not only as a tool in the hands of management, but also provides for a technique of evaluating the performance of the management itself. It operates as a double-edged sword assisting the management in proper performance of its functions of planning, decision-making and control, and at the same time, enabling the owners and other interested parties to evaluate and appraise the management of the enterprise.

## **15. ROLE OF MANAGEMENT ACCOUNTANT**

Depending upon the company situation - size, nature and organisational set up and his own capabilities and position in the company, the management accountant may be required to perform various and varied functions. The importance and effectiveness of his function would also depend upon the confidence reposed in him by the top

management and the functional managers. His functions generally embrace each and every activity of the management which can be summarized as follows:

1. Management Accountant establishes, coordinates and administers plans to facilitate the forecasting of sales, expense budgets and cost standards that will permit profit planning, capital budgeting and financing.
2. He will formulate accounting policy and procedures. Operating data and special reports must be prepared so that the performance can be compared with plans and standards, and any variance between actual operations and pre-determined standards can be analysed for corrective actions by management. Such comparisons between actual and expected activities should help the management in proper fixation of responsibility and also in the evaluation of the various functional and divisional heads.
3. Management Accountant is responsible for the protection of the business assets to the extent possible by external controls, internal auditing and insurance coverage.
4. He will be responsible for tax policies and procedures and will supervise and coordinate the reports required by various authorities.
5. Management Accountant must continually be aware of economic and social forces as well as the effect of governmental policies and actions on business activities.

An analysis of the above list (obviously not exhaustive) of functions, reflects the status of a management accountant. He is the principal officer in charge of the accounts of the company. He shall be responsible to the Board of directors for the maintenance of adequate accounting procedures and records on the operation of the business. He shall be responsible to the president or the chairman of the board with respect to the administration of his office. He shall perform such other duties and functions as may from time to time be assigned to him by the president or chairman of the board or the Board of directors. Thus, in his broad functional activities, the management accountant is responsible to the policy making group of top management, whereas, in his administrative activities he is responsible to the top executive officer.

## **16. TOOLS AND TECHNIQUES OF MANAGEMENT ACCOUNTING**

A number of tool and techniques have been used under management accounting to help management in achieving the desired goals. For this the management accountant normally uses the following tool and techniques:

- (i) *Financial Planning*: Financial planning is the process of deciding in advance about the financial activities necessary for the organisation to achieve the desired objectives. It includes determining both long term and short term financial objectives, formulating financial policies and developing the financial procedures etc. Financial policies may relate to the determination of the capital requirement, sources of funds, determination and distribution of income, use of debt and equity capital and the determination of the optimum level of investment in various areas.
- (ii) *Financial Statement Analysis*: Financial statements are analysed to make data more meaningful. Comparative statement analysis, common size

statement analysis, trend analysis, ratio analysis, cash flow analysis etc. are the major techniques of financial statement analysis used in management accounting.

- (iii) *Decision making:* Management accounting helps the management through the techniques of marginal costing, differential costing, capital budgeting, cash flow analysis, discounted cash flow etc. to select the best alternative which will maximise the profits of the business.
- (iv) *Control techniques:* Management should ensure that the plan formulated by it has been translated into action. Standard costing and budgetary control techniques are useful control techniques used by management.
- (v) *Statistical and graphical techniques:* Management accountant uses various statistical and graphical techniques in order to make the information more meaningful and presentation of the same in such a form so that it may help the management in decision making. The techniques of linear programming, statistical quality control, investment chart, sales and earning chart etc. are of vital use.
- (vi) *Reporting:* Management accountant prepares the necessary reports for providing information to the different levels of management by proper selection of data to be presented, organisation of data or selecting the appropriate method of reporting.

## **17. DIFFERENCE BETWEEN FINANCIAL ACCOUNTING AND COST ACCOUNTING**

Both financial accounting and cost accounting are concerned with systematic recording and presentation of financial data. Financial accounting reveals profits and losses of the business as a whole during a particular period, while cost accounting shows, by analysis and localisation, the unit costs and profits and losses of different product lines. The main difference between financial accounting and cost accounting are summarised below:

(1) Financial accounting aims at safeguarding the interests of the business and its proprietors and others connected with it. This is done by providing suitable information to various parties, such as shareholders or partners, present or prospective creditors etc. Cost accounting on the other hand, renders information for the guidance of the management for proper planning, operation, control and decision making.

(2) Financial accounts are kept in such a way as to meet the requirements of the Companies Act, Income-tax Act and other statutes. On the other hand cost accounts are generally kept voluntarily to meet the requirements of management. But now the Companies Act has made it obligatory to keep cost records in some manufacturing industries.

(3) Financial accounting emphasizes the measurement of profitability, while cost accounting aims at ascertainment of costs and accumulates data for this very purpose.

(4) Financial accounts disclose the net profit and loss of the business as a whole, whereas cost accounts disclose profit or loss of each product, job or service. This

enables the management to eliminate less profitable product lines and maximise the profits by concentrating on more profitable ones.

(5) Financial accounting provides operating results and financial position usually gives information through cost reports to the management as and when desired.

(6) Financial accounts deal mainly with actual facts and figures, but cost accounts deal partly with facts and figures and partly with estimates.

(7) In case of financial accounts stress is on the ascertainment and exhibition of profits earned or losses incurred in the business. In cost accounts the emphasis is more on aspects of planning and control.

(8) Financial accounting is concerned with historical records, while cost accounting is concerned with historical cost but also with pre-determined cost

(9) Financial accounts are concerned with external transactions i.e. transactions between the business concern on one side and third parties on the other. These transactions form the basis for payment or receipt of cash. While cost accounts are concerned with internal transactions which do not form the basis of payment or receipt of cash.

(10) The costs are reported in aggregate in financial accounts but costs are broken into unit basis in cost accounts.

(11) Financial accounts do not provide information on the relative efficiencies of various workers, plants and machinery while cost accounts provide valuable information on the relative efficiencies of various plants and machinery.

(12) Financial reports (profit and loss account and balance sheet) are prepared periodically – quarterly, half yearly or annual basis. But cost reporting is a continuous process and may be daily, weekly, monthly etc.

## **18. DIFFERENCE BETWEEN FINANCIAL ACCOUNTING AND MANAGEMENT ACCOUNTING**

Financial accounting and management accounting both appear to be similar in as much as both study the impact of business transactions and events of the enterprise and report and interpret the results thereof. Both provide information for internal as well as external use. But management accounting, although having its roots in financial accounting differs from the latter in the following respects.

1. Financial accounting deals with the business transactions and events for the enterprise as a whole. Management accounting, in addition to the study of events in relation to the enterprise as a whole takes organisation in its various units and segments and attempts to trace the impact and effect of the business transactions and events through its various divisions and sub-divisions. Thus, while the financial statement - profit and loss account, balance sheet and cash flow statements reveal the overall performance and position of the enterprise. Management accounting reports emphasise on the details of operational costs, inventories, products, process and jobs. It traces the effect and impact of the business transactions and events on costs, inventories, processes, jobs and products.

2. Financial accounting is attached more with reporting the results and position of the business to persons and authorities other than management - Government, creditors, investors, owners, etc. At times, financial accounting follows window-dressing tactics in order to project a better than actual image of the enterprise. Management accounting is concerned more with generating information for the use of internal management and hence the information reflects the real or really expected position.
3. Financial accounting is necessarily historical. It records and analyses business events long after they have taken place. Management accounting analyses the events as they take place and also anticipates such events for the future. Thus, it uses data which generally has relevance to the future.
4. Since financial accounting data is historical in nature, it is more precise than the management accounting data, which generally reflects the expected future, and hence could only be an estimation. This provides the necessary rapidity to management accounting information.
5. The periodicity in reporting financial accounts is much wider than in case of management accounting. In financial accounting, generally, results are reported on year to year basis. In management accounting, weekly, fortnightly and even monthly reporting is used.
6. Financial accounting has to be governed by the "generally accepted principles". This is so because, it has to cater for the informational needs of the outsiders. It has to stick to the generally accepted methods of presentation of such information. Regarding the contents and form of information, financial accounting has to abide by the legal provisions also. Management accounting has not to worry about such legal and/or conventional constraints and the "generally accepted principles". It is free to formulate its own rules, procedures and forms, because the information it generates is solely for internal consumption. In management accounting fixed assets may be stated at appraisal values, overhead costs may be omitted from inventories or revenues may be recorded before realisation. Generally accepted principles of financial accounting do not permit such accounts. What is important in management accounting is the usefulness of the information for managerial functions rather than its general acceptability. The form and content of management accounting information differs according to the needs and purpose.
7. Financial accounting is a must in case of joint stock companies to meet the statutory provisions of company law and tax laws. Even in case of sole proprietorship and partnership firms financial accounting becomes a necessity for tax purposes. Management accounting, on the other hand, is entirely optional and its forms and contents depend upon the outlook of the management.
8. Financial statements prepared under financial accounting consists of monetary information only. Management accounting statements in addition to monetary information also consist non-monetary information, viz., quantities of materials consumed, number of workers, quantities produced and sold and so on.

9. Financial statements are required to be published and audited by statutory auditors. Management accounting statements are for internal use and thus neither published nor audited.

### **19. DIFFERENCE BETWEEN COST ACCOUNTING AND MANAGEMENT ACCOUNTING**

Cost accounting and management accounting both are internal to the organisation. Both have the same objectives of assisting management in its functions of planning, decision-making, controlling and techniques like budgetary control, standard costing and marginal costing owe their existence to cost accounting and have slipped into the kitbag of the management accountant. There is a good deal of overlapping in their functions. However, the two systems can be differentiated on the following grounds:

1. Cost accounting is concerned more with the ascertainment, allocation, distribution and accounting aspects of costs. Management accounting is concerned more with impact and effect aspect of costs.
2. Cost accounting data generally serves as a base to which the tools and techniques of management accounting can be applied to make it more purposeful and management oriented. Whereas, the management accounting data is derived both, from the cost accounts and financial accounts.
3. The management accountant places the data in a wider perspective than the cost accountant. This accounts for a greater degree of relevance and objectivity in management accounting than in cost accounting. It is the management accountant who is supposed to have a clear idea regarding the items and types of costs required to analyse and decide specific business problems and the effect of such costs on alternate solutions. A cost accountant is definitely helpful in collecting such costing data for the management accountant.
4. In the organisational set-up, management accountant generally is placed at a higher level of hierarchy than the cost accountant.
5. The approach of the cost accountant is much narrower than that of a management accountant, who may have to use certain economic and statistical data along with the costing data to enable the management to be more accurate the precise in its functions of planning, decision-making and control.
6. Management accounting, in addition to the tools and techniques, like variable costing, break-even analysis, standard costing, etc., available to cost accounting, also makes use of other techniques like cash flow, ratio analysis, etc., which are not within the scope of cost accounting.
7. Management accounting includes both financial accounting as well as cost accounting. It also embraces tax planning and tax accounting. Cost accounting does not include financial accounting and has nothing to do with tax accounting.
8. Management accounting is concerned equally with short-range and long-range planning and uses highly sophisticated techniques like sensitivity

analysis, probability structures, etc., in the planning and forecasting prices. Cost accounting is more concerned with short-term planning. Evaluation of capital investment projects is the speciality of management accountant.

9. Management accounting is concerned, both, with assisting management in its functions, as well as evaluating the performance of the management as an institution. Cost accounting is concerned merely with assisting in management functions and does not provide for the evaluation of the performance of management.
10. Cost accounting is mostly historical in its approach and it projects the past. Management accounting is futuristic in its approach. Management accounting is more predictive in nature than cost accounting.
11. Cost accounting system can be installed without management accounting. While management accounting cannot be installed without a proper cost accounting system.

## 20. LIMITATIONS OF MANAGEMENT ACCOUNTING

The management accountant has the responsibility of producing and providing dependable accounting and other relevant data for the use of management. The data provided, if it has to be really effective in the management process, must be: (1) relevant and precise, (2) consistent and comparable, (3) presented in an appropriate and understandable form, (4) provided at appropriate time intervals, and (5) provided to meet the needs of various levels of management. The management accountant is expected to keep in mind the above points while producing his product. However, the information and reports presented by management accountant still suffers from the following limitations:

- (1) *Different meaning of the same term:* In accounting different terms carry different meanings under different set of circumstances and conditions. Such meanings and figures may superficially resemble one another and a person who is not, familiar with them may easily become confused or frustrated. The most common source of confusion is the word 'cost'. There are historical costs, full costs, direct costs, variable costs, standard costs, original costs, residual costs, net costs, differential costs, opportunity costs, estimated cost and incremental costs. Some of these terms are synonymous, others are not exactly synonymous through resembling each other, still others, although not synonymous at all, may be used as if they were synonymous. In order to avoid such confusion and misunderstanding, the management accountant should in approaching a specific problem, define, as carefully and clearly as possible, the meaning in which such words are being used. He should as far as possible be consistent in prescribing the meanings to such terms.
- (2) *Approximations:* Management accounting data cannot be completely accurate in all respects. A good deal of approximation is involved in the compilation and preparation of such data. The smaller the time gap between the happening and reporting of an event, the greater will be the approximation. In addition, in the working out of the estimates and future costs, approximation has to be resorted to. Even in case of historical data, the cost and time required for accuracy may be prohibitive and compel the

management accountant to do some approximations. Therefore, while using the information provided by the management accountant, the management must be aware of the degree of approximation. The management accountant should follow a consistent practice in matters of approximations.

- (3) *Incompleteness of the data:* Management accountant can provide only the quantitative data as far as available, to the management. Business problems and their decisions often require additional quantitative as well as qualitative data which may be outside the purview of the management accountant. For example, the management accounting data will not disclose the extent to which the quality and utility of a product is affected by the changes in materials or methods of production. The management should guard itself against the belief that problems could be completely solved by numerical analysis. The management accountant should point out as far as possible, the qualitative factors relevant for decision-making in each case.
- (4) *Importance of proper management action:* A management accountant may provide information and figures in most appropriate form to the management. But figures themselves are nothing more than marks on pieces of paper, and by themselves they accomplish nothing. Anything that the business accomplishes is the result of action of the people. Figures can only assist people in the organisation in various ways. It is the management and the people in the organisation who are to use the figure by understanding their language and act accordingly. The same set of figures, if not acted upon by the management, becomes useless or if misunderstood by the management, may lead to unwise actions.

#### LESSON ROUND UP

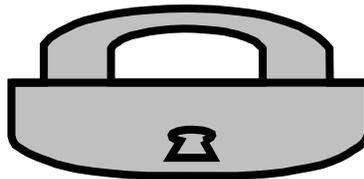


- Cost is the amount of expenditure (actual or notional) incurred on, or attributable to a specified thing or activity.
- Costing is the techniques and processes of ascertaining costs.
- Cost accounting is the establishment of budgets, standard costs and actual costs of operations, processes, activities or products, and the analysis of variances, profitability or the social use of funds.
- Principles of cost accounting are - cost should be related to its cause; cost should be charged only after it has been incurred; the convention of prudence should be ignored; abnormal costs should be excluded from cost accounts; past costs not to be charged to future period; principles of double entry should be applied wherever necessary.
- Costing is an aid to management, creditors, employers and national economy.
- Costs have been classified by - time, nature or elements, degree of traceability to the product, association with the product, changes in activity or volume,

function, relationship with accounting period, controllability, cost for analytical and decision-making purposes, etc.

- Cost centre means, a production or service location, function, activity or item of equipment whose costs may be attributed to cost units.
- Cost unit is a unit of product or service in relation to which costs are ascertained.
- Techniques of costing includes - historical or conventional costing, standard costing, marginal costing, uniform costing, direct costing, absorption costing, and activity based costing.
- Methods of costing covers - job costing, contract costing, batch costing, terminal costing, operation costing, process costing, unit costing, operating costing, multiple or composite costing, departmental costing, etc.
- Management accounting is an integral part of management concerned with identifying, presenting and interpreting information used for: (a) formulating strategy; (b) planning and controlling activities; (c) decision taking; (d) optimising the use of resources; (e) disclosure to shareholders and others external to the entity; (f) disclosure to employees; (g) safeguarding assets.
- The tools and techniques of management accounting includes - financial planning, financial statement analysis, marginal costing, differential costing, capital budgeting, cash flow analysis, standard costing and budgetary control, techniques of linear programming, statistical quality control, investment chart, sales and earning chart, etc.
- Financial accounting, cost accounting and management accounting are distinct from each other.

### SELF TEST QUESTIONS



1. "The term 'cost' must be qualified according to its context". Discuss this statement referring to important concepts of cost.
2. Distinguish between costing and cost accounting. What are the methods of costing that are used in cost accounting ?
3. "Financial accounting treats costs very broadly while the cost accounting does this in much greater detail" Explain this statement and state the limitations of financial accounting.
4. Define costing and discuss the objectives of cost accounting.
5. Cost accounting assists: (a) in controlling efficiency; (b) in pricing products; and (c) in providing a basis for operating policy. Amplify these points, giving reasons for your views.
6. State the advantages that may be derived from a sound system of cost accounting.

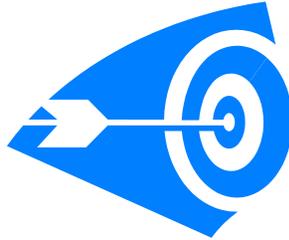
7. What do you mean by elements of cost ? Discuss the various elements of cost.
8. Define and explain the terms (a) cost centre and (b) cost unit.
9. You have been asked to design a system of cost accounting for installation in a factory. Describe the essentials that should be considered before you design such a system.
10. Write note on the following, indicating in which kinds of industries or undertakings, the different methods could be suitably applied:
  - (i) Single or output costing
  - (ii) Process costing
  - (iii) Operating Costing
  - (iv) Multiple Costing.
11. What methods of costing would you apply in the following industries ? State how cost should be ascertained in each case ?
  - (i) Building,
  - (ii) Colliery,
  - (iii) Soap works,
  - (iv) Motor cars,
  - (v) Radio sets,
  - (vi) Ship building.
12. State which of the following statements are correct :
  - (i) Cost Accounting is not needed by a non-profit organisation such as a hospital.
  - (ii) Notional costs and imputed costs mean the same thing.
  - (iii) If management is not interested in costing information there should be no costing department.
  - (iv) Notional costs are not included while ascertaining costs.
  - (v) Conversion costs and overheads are interchangeable terms.
  - (vi) The method of costing used in a refinery is "process costing".
  - (vii) Multiple costing means a combination of two or more methods.
  - (viii) To design a costing department is not difficult. Study another similar organisation and study a book on costing and you know what to do.
  - (ix) In cost accounting, like financial accounting, absolute accuracy is aimed at.
  - (x) All materials and stores such as lubricating oil, will be direct.

*[Correct : (ii), (iii), (vi) (vii)].*
13. Explain briefly the meaning, nature and scope of management accounting.
14. Discuss the importance and limitations of management accounting for managerial decision-making.
15. Explain the tools and techniques of management accounting.

16. Distinguish between management accounting, cost accounting and financial accounting.
  17. "Management accounting is concerned with accounting information which is useful to management". Comment.
  18. Explain briefly the role of a management accountant.
  19. What are the limitations of management accounting? How can these limitations be eliminated?
-

STUDY IX  
**MATERIAL COST**

**LEARNING OBJECTIVES**



- Understand the importance of material control.
- Describe the methods of purchasing and procedure thereof.
- Explain the functions of store - keeping.
- Identify the different techniques of inventory control.
- Understand the procedure of issue of materials and pricing of issues.
- Differentiate the different ways of material losses and accounting treatment thereof.

**1. COST OF MATERIAL**

The material usually forms a major part of the total cost and constitutes one of the most important assets in the majority of the business enterprises. The materials are of two types, namely: (i) direct materials, and (ii) indirect materials. The materials which can be easily identified and attributable to the individual units being manufactured are known as direct materials. These materials also form part of finished product. All costs which are incurred to obtain direct material are known as direct material costs. Indirect materials, on the other hand, are those materials which are of small value such as nuts, pins, screws, etc. and do not physically form part of the finished product. Costs associated with indirect materials are known as indirect material costs. Factory supplies, office supplies and selling supplies are generally termed as stores. The success of business concern depends to a large extent upon efficient purchasing, storage accounting, control and consumption.

**2. METHODS OF PURCHASING**

Purchasing is an art. Wrong purchases increase the cost of materials, store equipments and the finished goods. Hence, it is imperative that purchases should be effectively, efficiently and economically performed.

The methods of purchasing can be broadly classified as centralised and localised purchasing.

**2.1 Centralized Purchasing**

In a large organisation, manufacturing units are many. In such cases centralized purchasing is beneficial. Centralised purchasing means that all purchases are made

by a single purchase department. The advantages are:

- (i) Specialised and expert knowledge is available.
- (ii) Advantages arise due to bulk purchases.
- (iii) The cost of purchasing can be reduced and selling price can be lowered.
- (iv) As there is good knowledge of market conditions, greater control can be exercised.
- (v) When materials have to be imported, it is advantageous to centralise the buying.
- (vi) Economy and ease in compilation and consultation of results.
- (vii) It can take advantage of market changes.
- (viii) Investment in inventories can be reduced.
- (ix) Other advantages include undivided responsibility, consistent buying policies.

The factors to be considered when decision regarding centralisation has to be taken are geographical separation of plants, homogeneity of products, type of material bought, location of supplies etc.

## **2.2 Decentralisation of Purchases**

In decentralised purchasing, each department or branch makes its own purchases. The advantages of localised purchasing are:

- (i) Each plant may have its own particular need. This can be given special attention.
- (ii) Direct contact can be established with suppliers.
- (iii) The time lag between indenting and receiving materials can be reduced.
- (iv) Technical requirements of each plant can be ascertained.

## **3. PURCHASE PROCEDURE**

Though different concerns adopt different practices regarding details recorded, forms and records used. The routine followed for the purchase of materials is usually the same. The steps may be enumerated as follows:

- (i) Indenting for materials
- (ii) Issuing of tenders and receiving quotations
- (iii) Placing of order
- (iv) Inspecting stores received
- (v) Receiving the stores accepted in inspection
- (vi) Checking and passing bills for payment.

### **3.1 Indenting for Materials**

The stores department prepare indents for the purchase of materials and sends it to the purchase department. The indents may be for replenishment of stocks or for a special job. The former are called regular indents and the latter special indents.

Regular indents are prepared periodically and placed when the ordering level for different items of stocks are reached. The quantity indented is equal to the ordering quantity fixed for each item. The special indents are based on the demands received either from the planning or production department. They should be certified by the

department originating it. They are purchased as and when required. Every document is usually linked with the previous and succeeding transaction to facilitate back references.

**3.2 Issue of Tenders to Suppliers**

The purchase department issue tenders to suppliers or publish them in papers. The suppliers quote their terms of price and delivery/payment. After the last date for receipt of quotations is over, the tenders are opened and a comparative statement is prepared. Tenders are prepared in triplicate. Of them, two are sent to the suppliers and one is retained with the purchase department. The supplier mentions his terms in the original.

While considering the tenders, the reliability of the supplier has to be taken into account. The quality of goods and time taken to deliver the goods on previous occasions should be checked. The financial stability and capacity to deliver goods should be ensured.

Sometimes purchases may be made without inviting quotations. The circumstances are when prices are controlled, or purchases are made under long-term contracts, or catalogue prices are available or when there is a cost plus contract. If, purchase is made under cost plus profit basis, the cost composition and reasonableness of price should be checked.

**3.3 Placing of Purchase Orders**

Normally six copies of purchase orders are made. The supplier, stores, inspection department, store accounting section, purchase department and progress department are sent one copy each.

The purchase order has legal and accounting significance. From legal point of view, it binds both the parties to the terms of the contract. From accounting point of view, it signifies the amount which has to be spent. It signifies the stores department to accept the goods and the accounts department to accept the bill.

<b>A.B.C. CO. LTD.</b>						
<b>MATERIALS PURCHASE ORDER</b>						
Order No.:	Indent No.:		Store Receipt No.:			
Date:	Quotation No.:		Inspection Note No.:			
To						
.....						
.....						
.....						
This is in response to your quotation against our Tender No.:.....						
The terms and conditions mentioned overleaf will be applicable. Please supply the following items at the prices indicated below:						
Sl. No.	Description	Stores Code No.	Specification	Quantity	Unit	Price
Terms of Delivery:			Please send bill to:			
Terms of Payment:			For A.B.C. Co. Ltd.			
Special Conditions:						

SPECIMEN OF PURCHASE ORDER

### 3.4 Inspection

The supplier delivers goods at the place specified. Two delivery challans are prepared by the supplier one of which is returned. It is a proof of delivery. After receiving the goods, the inspection department or production department or maintenance department (as the case may be) is intimated.

The quality of materials should be in accordance with the standards. The inspector should examine the various points to be checked, the standard expected, tolerances allowed and method to be followed. After inspection, an inspection note has to be prepared in triplicate, one copy is sent to the supplier, one to the stores and one to the inspection department.

### 3.5 Receiving Stores

The stores department prepares a Stores Receipt Note for the quantity of stock accepted in inspection. After issuing of the Stores Receipt, the storekeeper is responsible for the stocks. The stores receipt is the document for the posting of receipts in Bin Card and the Stores Ledger. It is prepared in quadruplicate. The supplier, stores accounting section and purchase department are sent one copy each and one copy is retained with the stores. The supplier encloses this copy along with his bill. The stores accounting section prices the note on the basis of the purchase order.

### 3.6 Checking and Passing of Bills for Payment

Bills received by the purchase department are forwarded to the Stores Accounting Section to check the authenticity regarding quantity and price and the arithmetical accuracy. Special items included in the bills, e.g., freight, packing charges are verified with the purchase order. The bill is later passed for payment.

## 4. PRICING OF STORES RECEIPTS

Stores have to be valued carefully. All expenses incurred to receive and store the material forms part of the cost. The purchase price comprises of elements such as cost of raw material/item, sales-tax, cash discount, freight and delivery charges, etc. It will not be possible to calculate the exact cost as some items of expenses have low values and there is inconvenience in computing the cost. Generally all the items of cost except the basic raw material cost is charged to a "Stores Receiving and Handling Charges Account" and recovered as a percentage of stores consumed.

Items of expenses can be classified as follows:

(a) *Sales-tax and Other Taxes:* Sales tax is usually a small percentage of the basic value. If it is added to the cost of material, it increases clerical work and fractional figures may be there. For convenience it is accumulated under one account and is recovered through the stores receiving and handling charges account.

Other charges can be excise duty, custom duty, octroi etc.

(b) *Cash Discount:* It is an inducement/incentive offered by the supplier so that dues can be settled promptly. As it is a financial decision, it should not be included in costs. The company can take advantage of the discount provided it is in conformity with the company's policy. But the discount is lost if payment is not made in time. Since there is uncertainty regarding the credit, it is better to account for the discount separately.

(c) *Trade and Quantity Discounts:* Since it is deducted from the invoice price, there is no difficulty in accounting.

(d) *Joint Purchase Cost:* Sometimes, several materials or several grades of materials are purchased. Different grades may be used for different production orders, if all issues are priced at the same rate, there will over/under statement of costs.

Hence each grade of material is entered in different Bin Cards, and valued at current prices. The incidental costs are apportioned to the various grades according to the market price for each.

(e) *Extra/Spare Parts:* Sometimes spare parts are given by suppliers for which no charges are made. These should be properly accounted for. As no value is given, it reduces the unit cost of the goods.

(f) *Receiving, Loading, Inspection, Storage, Material Accounting Charges:* These expenses cannot be easily allocated to the materials. Hence, it is recovered as an overhead either on the basis of material consumed or as general overhead. Sometimes allocation rates are determined.

(g) *Transport Costs, Freight and Delivery Charges:* If materials transported and handled are bulky, then these costs can be ascertained separately for each item and included in the cost of material. If it is incurred collectively for many items, it is recovered through the Stores Receiving and Handling Charges Account. Another method is to pre-determine the transport cost for each material and add it to the cost of materials purchased. Any difference between the amount allocated and actuals is adjusted by transferring it to the Costing Profit and Loss Account.

(h) *Receiving and Handling Expenses:* These are the expenses incurred after materials are delivered and till they are stored. These expenses are recovered as a percentage of value of stores consumed through the Stores Receiving and Handling Charges Account. If these expenses are recovered as a percentage of purchases, we are capitalising the expenses. Part of the expenses will form part of value of unconsumed stock. But it is not a good accounting practice to carry it over from period to period. Hence, it is preferable to recover it as a percentage of consumption.

*Cost of Containers:* There may be following four cases;

- (i) Boxes are issued free of cost but sold at a price;
- (ii) Their value is included in the invoice price but they are not returnable;
- (iii) It is charged separately though the full value is recoverable from the supplier;
- (iv) The recoverable value is lesser than the price charged.

If the containers are not returnable, the material is issued at a price which includes this cost. When the empty containers have a disposal value, the sale price is credited to overhead. Alternatively, it can be deducted from the invoice price of the container.

Under the third method, the empty containers are returned and entered in the material return notes. The credit is given to the production order to which it was earlier charged.

If the containers are returnable, the containers are kept as a temporary charge/loan. There should be entries to record the receipt/return of the containers. If full credit is not given, the difference should be charged to the cost of the material.

*Provisional Pricing of Receipts*

There is a time lag between the date of supplying material and the date of submitting the bill. Pricing cannot be done unless the bill is presented as the bill gives costs of transport charges, taxes, etc.

But the receipts have to be valued. The price can be ascertained from the purchase order and the past actuals. Escalation clause, if any, has to be taken into account.

Receipts provisionally priced should be recorded so that adjustments can be made when actual prices are available.

**Illustration 1**

One parcel containing two important materials was received by a factory and the invoice pertaining to the same discloses the following information:

	₹
Material-I 500 kgs. @ ₹2.00 per kg.	1,000.00
Material-II 600 kgs. @ ₹1.60 per kg.	960.00
Insurance	39.20
Sales Tax	98.00
Freight etc.	55.00

Due to mishandling in the factory's store a loss of 10 units of material-I and 6 units of material-II was noted. What rate would you adopt, for issuing these vital components to the jobs? Also give your changed rate, if a provision of 10% is to be kept for probable risk of obsolescence.

**Solution:**

	<i>Matl.-I</i>	<i>kgs.</i>	<i>Matl.-II</i>	<i>kgs.</i>
	₹		₹	
Material Price	1,000	500	960.00	600
Insurance (value)	20		19.20	
Sales tax (value)	50		48.00	
Freight (weight)	25		30.00	
	1,095	500	1,057.20	600
(-) Loss due to mishandling (normal loss)		10		6
	1,095	490	1,057.20	594

Rate of issue = ₹1,095 ÷ 490 = ₹2.23 (approx.) for material-I.

= ₹1,057.20 ÷ 594 = ₹1.78 (approx.) for material-II.

**Revised Rate for issue**

	<i>Matl.-I</i>	<i>Matl.-II</i>
	( <i>kgs.</i> )	( <i>kgs.</i> )
Qty. available for issue	490	594.0
Less: 10% provision for obsolescence	<u>49</u>	<u>59.4</u>
Effective quantity for issue	<u>441</u>	<u>534.6</u>

∴ Revised rate for issue = ₹1,095 ÷ 441 = ₹2.48 (approx.) for Matl.-I

= ₹1,057.20 ÷ 534.6 = ₹1.98 (approx.) for Matl.-II.

**Illustration 2**

A consignment was received from a foreign supplier, containing four types of material. The invoice reveals the following :

Material A 2,000 kgs. @ ₹2.00 per kg.	₹	4,000.00
Material B 1,000 kgs. @ ₹3.00 per kg.		3,000.00
Material C 1,500 kgs. @ ₹4.00 per kg.		6,000.00
Material D 500 kgs. @ ₹4.50 per kg.		2,250.00
Insurance		152.50
Freight paid by supplier		1,000.00
Expenses incurred by importer		1,600.00
Duty paid by the importer		610.00
Loss due to breakage was recorded as follows:		
Matl. A - 20 kgs.; Matl. B - 20 kgs.; Matl. C - 45 kgs.; and Matl. D - 10 kgs.		

Provision of 10% is made for evaporation and minor losses due to seasonal variations. Calculate the rate at which these should be issued.

**Solution:**

Insurance and duty have been apportioned on the basis of value, whereas freight and other expenses have been apportioned on the basis of weight.

	A		B		C		D	
	₹	Units	₹	Units	₹	Units	₹	Units
Material cost	4,000	2,000	3,000	1,000	6,000	1,500	2,250.00	500
Insurance	40		30		60		22.50	
Freight	400		200		300		100.00	
Expenses paid by importer	640		320		480		160.00	
Duty	160		120		240		90.00	
<b>Total</b>	<b>5,240</b>		<b>3,670</b>		<b>7,080</b>		<b>2,622.50</b>	
(-) Loss due to breakage		20		20		45		10
	5,240	1,980	3,670	980	7,080	1,455	2,622.50	490
Rate of issue	2.65		3.74		4.87		5.35	
(-) 10% provision for evaporation		198		98		145.5		49
	5,240	1,782	3,670	882	7,080	1,309.5	2,622.50	441
Rate of issue after providing for loss	2.94		4.16		5.40		5.95	

## 5. STORE-KEEPING

Storekeeping is a service function. Storekeeping is the function of receiving materials, storing them and issuing these to workshops or departments.

The stores department is under the control of a person known as storekeeper. The storekeeper is a custodian of all the items kept in the store. The stores should be spacious, well lit and well equipped so that costs can be minimised and service can be provided effectively.

The main objectives of store-keeping are:

- (i) To protect stores against losses.
- (ii) To keep goods ready for delivery/issue.
- (iii) To provide maximum service at minimum cost.
- (iv) To avoid over-stocking and under-stocking.
- (v) To facilitate perpetual inventory.

## 6. FUNCTIONS OF STORE-KEEPING

The function of store-keeping may be summarised as follows :

- (a) *Receipt of material into storage:* Materials should be received unloaded, inspected and then moved to stores. The storekeeper classifies the materials, stores it in appropriate places and records the receipts in proper books.
- (b) *Record keeping:* The stores records should be maintained in an efficient and orderly manner so that materials can be easily located and information can be obtained for various departments.
- (c) *Storage of materials:* The stores should provide maximum protection and safety and accessibility and utilize minimum space. Suitable storage device should be installed.
- (d) *Maintaining stores:* To keep the stores in the desired condition over a period of time depends on the nature of the material, length of time in storage, rates of deterioration. Special covering or periodic lubrication is necessary to prevent damage due to atmospheric conditions.
- (e) *Issuing stores:* This function should be performed most efficiently, promptly and accurately. All issues should be properly recorded. All issues should be duly authorised and procedures laid down should be duly followed.
- (f) *Co-ordination with materials control:* The storekeeper is partly responsible for such co-ordination. Much depends on the type of production, size of the company, the organisation structure, etc.
- (g) Ensure that all transactions are posted in the Bin Card and that the Bin Card is up-to-date.
- (h) All items should be in its proper place.
- (i) Maintenance of stores at required levels.
- (j) Neatness in stores to facilitate physical verification.
- (k) Co-ordination and supervision of staff in the stores department.

- (l) Periodical review of various scales, measuring instruments, conversion ratios etc.
- (m) Protect stores from fire, rust, erosion, dust, theft, weather, heat, cold, moisture and deterioration etc.

## **7. CLASSIFICATION AND CODIFICATION OF MATERIALS**

For facilitating identification of materials, each item of stores is given a distinct name. Similar items are divided into sub-groups and a number of sub-groups are classified under major groups. Stores are usually classified either by nature or usage of stores.

Codification is the procedure for assigning symbols for each item in accordance with a proper plan.

The advantages of codification are:

- (i) Lengthy descriptions are replaced by a simple code.
- (ii) Hence, it economises space in forms and reduces clerical work.
- (iii) Ease in identification of stores.
- (iv) It is comprehensive.
- (v) It facilitates mechanised accounting.
- (vi) Secrecy of description can be maintained.
- (vii) It ensures clarity.

## **8. INVENTORY CONTROL**

Inventory control is the systematic control and regulation of purchase, storage and usage of materials in such a way as to maintain an even flow of production and at the same time avoiding excessive investment in inventories. Efficient material control reduces losses and wastages of materials that otherwise pass unnoticed.

Inventory control is the core of materials management. The need and importance of inventory varies in direct proportion to the idle time cost of men and machinery, and the urgency of requirements. If men and machinery in the factory could wait and so could customers, materials would not lie in want for then and no inventories, need be carried. But it is highly uneconomical to keep men and machines waiting and the requirements of modern life are so urgent that they cannot wait for materials to arrive after the need for them has arisen. Hence firms must carry inventories.

Because materials constitute a significant part of the total production cost of a product and since this cost is controllable to some extent, proper planning and controlling of inventories are of great importance. Inventory control is a planned method of determining what to indent, so that purchasing and storing cost are minimum without affecting production or sales. Without proper control, inventories have a tendency to grow beyond economic limits. Funds are tied up unnecessarily in surplus stores and stocks, productive operations are stalled, and finances of the plant are severely strained. Lack of control over inventory also leads to excessive consumption and wastage as operatives are liable to become careless with irrational supply of materials.

## 9. OBJECTIVES OF INVENTORY CONTROL

Scientific control of inventories should serve the following purposes:

- (i) To provide continuous flow of required materials, parts and components for efficient and uninterrupted flow of production.
- (ii) To minimise investment in inventories keeping in view operating requirements.
- (iii) To provide for efficient store of materials so that inventories are protected from loss by fire and theft and handling time and cost are kept at a minimum.
- (iv) To keep surplus and obsolete items to minimum.

It might seem axiomatic that inventory control is efficient as long as inventory level is going down. But the fact is that if inventories are minimised without guaranteeing adequate operations, inventories have been mismanaged rather than controlled efficiently. Thus the two basic objectives of inventory control appear to be conflicting in nature. Inventories should increase or decrease in amount and time as related to sales requirements and production schedules.

Responsibility for control of inventories is that of the top management, though decisions in this regard might well be based upon the combined judgement of the production manager, controller, the sales manager and the purchasing manager. This is desired in view of the financial considerations involved in the problem and also because of need for coordinating the different kinds of inventories and conflicting view points of different departments. For example, sales manager, purchasing executive and production manager usually favour, though for different reasons, the policy of carrying larger amount of stock whereas the financial manager will prefer to keep investment in inventories at the lowest possible level. However, in a large number of organisations inventory control is generally made the specific responsibility of purchasing department.

## 10. TECHNIQUES OF INVENTORY CONTROL

The following are the common techniques of inventory control:

- (i) Min-max plan
- (ii) The two-bin system
- (iii) Order cycling system
- (iv) The ABC analysis
- (v) Fixation of various levels
- (vi) Use of perpetual inventory system and continuous verifications
- (vii) Use of control ratios
- (viii) Review of slow and non-moving items.

### 10.1 Min-max plan

It is one of the oldest methods of inventory control. Under this plan the analyst lays down a maximum and minimum for each stock item keeping in view its usage, requirements and margin of safety required to minimize risks of stock-outs. The minimum level establishes the reorder point and order is placed for that quantity of material which will bring it to the maximum level.

The method is very simple and based upon the premise that minimum and maximum quantity limits for different items can fairly be well defined and established.

Considerations like economic order quantity and identification of high value and critical items of stock for special management attention are not cared for under this plan.

### **10.2 The two-bin system**

The basic procedure used under this system is that for each item of stock, two piles, bundles, or bins are maintained. The first bin stocks that quantity of inventory which is sufficient to meet its usage during the period that elapses between receipt of an order and the placing of the next order. The second bin contains the safety stock and also the normal amount used from order to delivery date. The moment stock contained in the first bin is exhausted and the second bin is tapped, a requisition for new supply is prepared and submitted to the purchasing department. Since no bin-tag (quantity record of materials) card is maintained, there is absence of perpetual inventory record under this bin.

### **10.3 Order cycling system**

In the order cycling system, quantities in hand of each item or class of stock is reviewed periodically say, 30, 60 or 90 days. If in the course of a scheduled periodic review it is observed that the stock level of a given item will not be sufficient till the next scheduled review keeping in view its probable rate of depletion, an order is placed to replenish its supply. Review period will vary from firm to firm and also among different materials in the same firm. Critical items of stock usually require a short review cycle. Order for replenishing a given stock item, is placed to bring it to some desired level which is often expressed in relation to number of day's or week's supply.

The scheduled periodic review plan does not consider differences in rates of usage for different items of stock with the result that items whose usage has declined will have surplus stock whereas for some items rate of depletion might have increased to the extent that their stock is exhausted much before the next review date. Moreover, the system tends to make procurement and purchasing activities reach their peak around the review dates.

### **10.4 The ABC Analysis**

With the numerous parts and materials that enter into each and every industrial product, inventory control lends itself, first and foremost, to a problem of analysis. Such analytical approach is popularly known as ABC analysis (Always Better Control), which is believed to have originated in the General Electric Company of America. The ABC plan is based upon segregation of materials for selection control. It measures the money value, i.e., cost significance of each material item in relation to total cost and inventory value. The logic behind this kind of analysis is that the management should study each item of stock in terms of its usage, lead time, technical or other problems and its relative money value in the total investment in inventories. Critical, i.e., high value items deserve very close attention, and low value items need to be devoted minimum expense and effort in the task of controlling inventories.

Under ABC analysis, the different items of stock may be ranked in order of their average inventory investment or on the basis of their annual rupee usage. The important steps involved in segregating materials or inventory control are:

- (i) Find out future use of each item of stock in terms of physical quantities for the review forecast period.
- (ii) Determine the price per unit for each item.

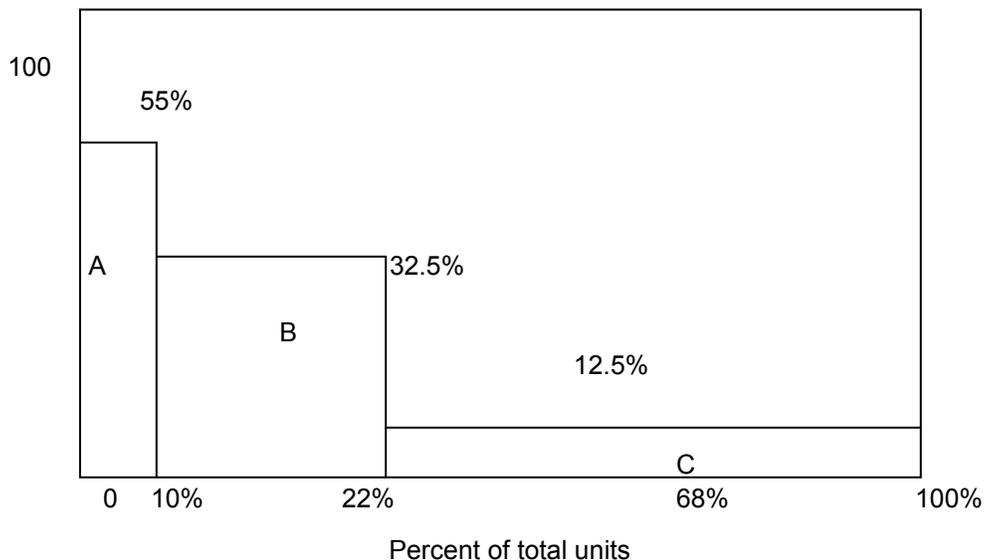
- (iii) Determine the total project cost of each item by multiplying its expected units to be used by the price per unit of such item.
- (iv) Beginning with the item with the highest total cost, arrange different items in order of their total cost as computed under step (iii) above.
- (v) Express the units of each item as a percentage of total costs of all items.
- (vi) Compute the total cost of each item as a percentage of total costs of all items.

If it is convenient different items may be classified into only three categories and labelled as A, B, and C respectively depending upon whether they are high value items, middle value items or low value items. If need be, percentage of different items may be plotted on a chart. The entire working of ABC analysis may be explained with the help of the following simplified example:

### Example

#### ABC Analysis

Items	Unit	% of total	Cost per unit	Total Cost	% of total cost
			₹	₹	
1	400	4	50.00	20,000	25.0
2	600	6	40.00	24,000	30.0
3	1,000	10	14.00	14,000	17.5
4	1,200	12	10.00	12,000	15.0
5	2,800	28	2.00	5,600	7.0
6	4,000	40	1.10	4,400	5.5
	10,000	100		80,000	100.0



**Graphical Presentation of ABC Plan**

### 10.5 Fixation of various levels

Certain stock levels are fixed up for every item of stores so that stocks and purchases can be efficiently controlled. These are:

- (a) *Maximum Level*: This represents the minimum quantity above which stocks should not be held at any time.
- (b) *Minimum Level*: This represents the minimum quantity of stock that should be held at all times.
- (c) *Danger Level*: Normal issues of stock are usually stopped at this level and made only under specific instructions.
- (d) *Ordering Level*: It is the level at which indents should be placed for replenishing stocks.
- (e) *Ordering Quantity*: It is the quantity that is ordered.

#### *Maximum Level:*

It is normally a matter of policy. The various factors that should be taken into consideration are:

- (a) *Capital Outlay*: Investment to be made in stores, raw materials and other bulk items is an important consideration.
- (b) Storage space available.
- (c) Storage and insurance cost.
- (d) Certain materials deteriorate if stored over a long period. This limits the quantity of maximum stock kept.
- (e) If certain goods are subject to obsolescence, the spare parts and components etc. of such products stocked should be limited.
- (f) Consumption per annum.
- (g) The lead time.
- (h) Certain goods are seasonal in nature and can be purchased only during specific period. Hence maximum level will be fixed for each season.
- (i) Price advantage arising out of bulk purchases should be availed.
- (j) The Economic Order Quantity also influences the maximum level.

Maximum stock level can be computed as follows:-

$$\text{Maximum stock level} = \text{Re-order level} + \text{Re-ordering quantity} - (\text{Minimum consumption} \times \text{Minimum re-order period}).$$

#### *Minimum Level*

The minimum level is also a matter of policy and is based on :

- (a) Consumption per annum

- (b) The lead time
- (c) The production requirement
- (d) The minimum quantity that could be advantageously purchased.
- (e) If an item is made to order then no minimum level is necessary.

Minimum level = Re-order level - (Normal consumption x Normal re-order period).

#### *Danger or Safety Level*

Material consumption varies from day to day, week to week and hence accurate forecasting is not possible. A safety or reserve stock is kept to avoid stock-out. The desirable safety stock level is that amount which minimises stock-out costs and also the carrying costs.

This level is a level of stock between the minimum level and nil stock. It is calculated for those items which can be utilised for multiple orders or products. The store-keeper usually does not issue once the danger level is reached. Usually priority is given to some order/product for the use of these items. This level is fixed up specially for control of production so that priority items can be produced.

This level is sometimes fixed above the minimum level. In this case, this level is preventive. If the level is below the minimum level, this level is corrective.

The safety stock level can be computed as follows:

Safety stock level = Ordering level - (Average rate of consumption ×  
Re-order period)  
OR  
(Maximum rate of consumption - Average rate of consumption) ×  
Lead time

#### *Ordering Level*

The annual consumption of an item and the time lag between ordering and receiving can be collected from past records. Based on these facts and policies, the ordering level and ordering quantity can be calculated, as follows:

Ordering level = Minimum level + Consumption during time lag period  
OR  
Maximum consumption x Maximum re-order period.

The ordering level should be fixed so that when an indent is placed at the ordering level, the stock reaches the minimum level when the replenishment is received. The ordering level is calculated from the following factors:

- (a) The expected usage
- (b) The minimum level
- (c) The lead time.

The order point is calculated keeping in mind the worst conditions so that minimum stock is always maintained.

### Illustration 3

Materials X and Y are used as follows:

Minimum usage – 50 units each per week

Maximum usage – 150 units each per week

Normal usage – 100 units each per week

Ordering quantities X = 600 units

Y = 1,000 units

Delivery period X = 4 – 6 weeks

Y = 2 – 4 weeks

Calculate for each material (i) Maximum level (ii) Minimum level and (iii) Ordering level.

#### Solution:

##### Material X

$$\begin{aligned} \text{Ordering level} &= \text{Maximum usage} \times \text{Maximum delivery period} \\ &= 150 \times 6 \\ &= 900 \text{ units.} \end{aligned}$$

$$\begin{aligned} \text{Minimum level} &= \text{Ordering level} - (\text{Normal usage} \times \text{Normal delivery period}) \\ &= 900 - (100 \times 5) \\ &= 400 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{Maximum level} &= (\text{Ordering level} + \text{Ordering quantity}) - \\ &\quad (\text{Minimum usage} \times \text{Minimum delivery period}) \\ &= 900 + 600 - (50 \times 4) \\ &= 1,500 - 200 \\ &= 1,300 \text{ units} \end{aligned}$$

##### Material Y

$$\begin{aligned} \text{Ordering Level} &= \text{Maximum usage} \times \text{Maximum delivery period} \\ &= 150 \times 4 = 600 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{Minimum Level} &= \text{Ordering level} - (\text{Normal usage} \times \text{Normal delivery period}) \\ &= 600 - (100 \times 3) = 300 \text{ units.} \end{aligned}$$

$$\begin{aligned}
 \text{Maximum Level} &= (\text{Ordinary level} + \text{Ordering quantity}) - (\text{Minimum usage} \times \text{Minimum delivery period}) \\
 &= 600 + 1,000 - (50 \times 2) \\
 &= 1,600 - 100 = 1,500 \text{ units.}
 \end{aligned}$$

Normal delivery period has been computed as follows:

$$\text{Material X} = \frac{4+6}{2} = 5 \text{ weeks}$$

$$\text{Material Y} = \frac{2+4}{2} = 3 \text{ weeks}$$

### *Economic Ordering Quantity*

The basic problems of inventory control are two viz., what quantity of an item should be ordered at a time and when should an order be placed. While deciding economic ordering quantity, the efforts are directed to ascertain the ideal order size. While deciding the ideal order size, factors such as inventory carrying charges and the ordering cost associated with the placement of purchase orders are to be considered; the total of both has to be minimised. The inventory carrying charges include interest on the capital invested in the stores of materials, rent for the storage space, salaries and wages of the store-keeping department, any loss due to pilferage and deterioration, stores insurance charges, stationery, etc. used by the stores, taxes on inventories, etc. Ordering costs may include rent for the space used by the purchasing department, the salaries and wages of officers and staff in the purchasing department, the depreciation on the equipment and furniture used by the department, postage, telegraph charges and telephone bills, the stationery and other consumables required by the purchasing department, any travelling expenditure incurred, and the costs of inspection etc., on receipt of material.

The optimum ordering quantity, i.e., the quantity for which the cost of holding plus the cost of purchasing is the minimum is known as Economic ordering Quantity and is calculated by the following formula:

$$\text{E.O.Q.} = \sqrt{\frac{2U \times P}{S}}$$

Where,

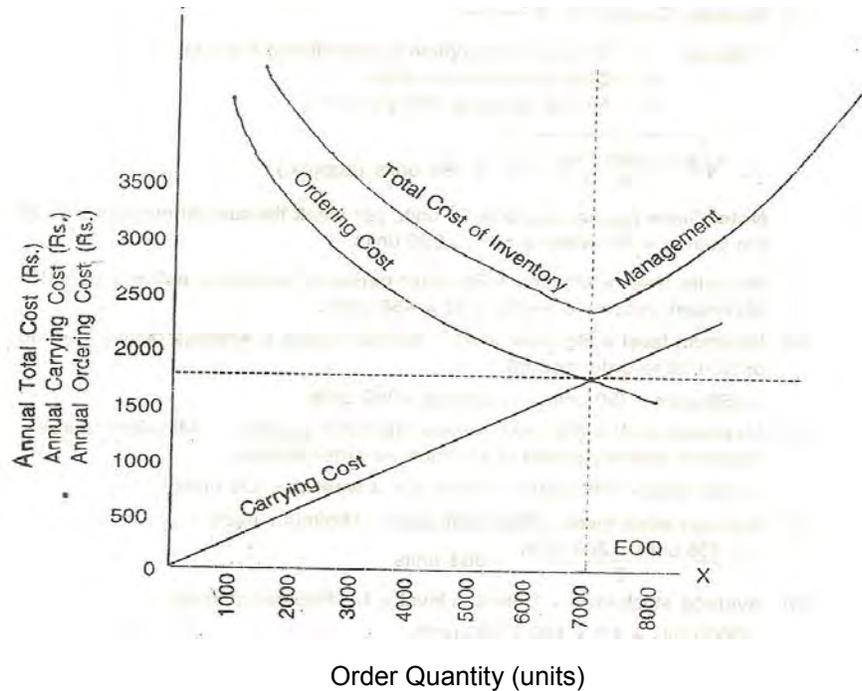
E.O.Q. = Economic Ordering Quantity

U = Annual consumption (units) during the year

P = Cost of placing an order

S = Annual cost of storage of one unit.

While deciding the question as to what should be the economic ordering quantity one has to ensure that the cost incurred should be minimum. An ideal order size, therefore, is at the quantity where the cost is minimum i.e., cost of holding the stock and ordering cost intersect each other. This is graphically shown hereunder:



#### Illustration 4

Ace Ltd. manufactures a product and the following particulars are collected for the year ended March, 2011:

— Monthly demand (units)	250
— Cost of placing an order (₹)	100
— Annual carrying cost (₹ per unit)	15
— Normal usage (units per week)	50
— Minimum usage (units per week)	25
— Maximum usage (units per week)	75
— Re-order period (weeks)	4–6

You are required to calculate:

- (i) Re-order quantity
- (ii) Re-order level
- (iii) Minimum level
- (iv) Maximum level
- (v) Average stock level.

**Solution:**

$$(i) \text{ Re-order Quantity} = \sqrt{\frac{2U \times P}{s}}$$

Where, U = Annual consumption (units) during the year

P = Cost of placing an order

S = Annual carrying cost per unit

$$= \sqrt{\frac{2 \times 2,600 \times \text{Rs.}100}{\text{₹}15}} = 186 \text{ units (approx.)}$$

**Note:** Since normal usage is 50 units per week the annual consumption of the year is = 52 weeks x 50 = 2,600 units.

- (ii) Re-order level = Maximum Re-order period or Maximum delivery period x Maximum usage = 6 weeks x 75 = 450 units.
- (iii) Minimum level = Re-order level – (Normal usage x Average delivery period or Normal re-order period)  
= 450 units – (50 units x 5 weeks) = 200 units.
- (iv) Maximum level = (Re-order level + Re-order quantity) - (Minimum usage x Minimum delivery period or Minimum re-order period)  
= (450 units + 186 units) – (25 units x 4 weeks) = 536 units.
- (v) Average stock level = [(Maximum level + Minimum level) ] ÷ 2  
$$\frac{536 \text{ units} + 200 \text{ units}}{2} = 368 \text{ units.}$$

Or Average stock level = Minimum level + 1/2 Reorder quantity  
= 200 units + 1/2 x 186 = 293 units.

### Illustration 5

A factory requires 1,500 units of an item per month. The cost of each unit is ₹27. The cost per order is ₹150 and inventory carrying charge works out to 20% of the average inventory. Find out the economic order quantity (EOQ) and ascertain the number of orders to be placed per year. Would you accept a 2% price discount on a minimum supply of 1,200 units?

#### Solution:

Annual requirement 1500 units × 12 = 18,000 units

$$\begin{aligned} \text{EOQ} &= \sqrt{\frac{2 \times U \times P}{S}} = \sqrt{\frac{2 \times 18,000 \times 150}{20\% \text{ of } \text{₹}27}} = \sqrt{\frac{54,00,000}{5.40}} \\ &= \sqrt{10,00,000} \\ &= 1000 \text{ Units} \end{aligned}$$

No. of orders per year = 18000 ÷ 1000 = 18 orders

If discount is given (original price – 2% discount)

Cost price = ₹27 – 0.54 = ₹26.46

No of orders to be placed:  $18000 \div 1200 = 15$  orders

Inventory carrying cost : 20% of 26.46 = ₹5.292

Total cost without discount = ordering cost + carrying cost + purchase price  
 $= 18 \times 150 + \frac{1}{2} \times 1000 \times 5.40 + 18000 \times 27$   
 $= 2700 + 2700 + 4,86,000$   
 $= ₹4,91,400$

Total cost with 2% discount =  $15 \times 150 + \frac{1}{2} \times 1200 \times 5.292 + 18000 \times 26.46$   
 $= 2250 + 3175.20 + 4,76,280$   
 $= ₹4,81,705.20$

Since the total cost is less with 2% discount, the proposal may be accepted.

### 10.6 Use of perpetual inventory system and continuous verification

The perpetual inventory system records changes in materials, work-in-progress on a daily basis. Hence managerial control and preparation of interim financial statements is easier. Perpetual inventory derived its name because it indicates the amount of stock in hand at all times. It facilitates verification of stocks at any time and helps to authenticate the correctness of stock records.

The two main functions of perpetual inventory are:

- (a) It records the quantity and value of stock in hand.
- (b) There is continuous verification of physical stock.

Chartered Institute of Management Accountants, London has defined it as “the recording as they occur of receipts, issues and the resulting balances of individual items of stock in either quantity or quantity and value”.

A perpetual inventory is usually checked by a programme of continuous stock-taking and the two terms are sometimes loosely considered synonymous. Perpetual inventory means the system of records, whereas continuous stocktaking means the physical checking of those records with actual stocks.

The perpetual inventory method has the following advantages:

- (a) The inventory of various items can be easily ascertained. Hence profit and loss account and balance sheet can be easily prepared.
- (b) Information regarding material on hand eliminates delays and stoppage in production.
- (c) The investment in stock can be reduced to the minimum keeping in view the operational requirements.
- (d) Because of internal check, the activities of various departments are checked. Hence stores records are reliable.
- (e) Production need not be stopped when stock-taking is carried out.
- (f) These records give the cost of materials. Hence management can exercise control over costs.

- (g) Discrepancies and errors are promptly discovered and remedial action can be taken to prevent their reoccurrence in the future.
- (h) This method has a moral effect on the staff, makes them disciplined and careful and acts as a check against dishonest actions.
- (i) Loss of interest on capital invested in stock, loss through deterioration, obsolescence can be avoided.
- (j) Stock figures are available for insurance purposes.
- (k) It reveals the existence of surplus, dormant, obsolete and slow moving material and hence remedial action can be taken.

Perpetual inventory system is comprised of:

- (i) Bin Card
- (ii) Stores Ledger
- (iii) Continuous Stock-taking.

#### *Bin Card*

A bin card is a quantitative record of receipts, issues and closing balances of items of stores. Each item is accompanied by a separate bin card. The bin card is posted as and when a transaction takes place. Only after the transaction is recorded, the items are received/issued. On receipt of materials, the quantity is entered in the bin card from the goods received note in the receipt column and the issues to various departments in the issue column. The balance quantity is calculated and recorded.

The various levels indicated in a bin card enables the store-keeper to requisition materials as and when required. Sometimes quantity on order and quantity reserved is also noted separately.

Code No.:		Level of Stock				
Description:		Maximum:				
Unit of Quantity:		Minimum:				
Location Code:		Danger:				
		Ordering:				
		Ordering Qty:				
Date	Doc. No.	Receipts	Issues	Balance	On Order	Reserved

BIN CARD

#### *Stores Ledger*

The store ledger is maintained to record all receipt and issue transactions in respect of materials. The quantities and the values are entered in the receipts, issues and balance columns. Additional information regarding quantity on order and quantity reserved may be recorded. Separate sheets for each item or continuous stores ledger may be maintained. The sheets should be serially numbered to obviate the risk of removal or loss.

Code No.:	Maximum Level:	Suppliers' Name
Description:	Minimum Level:	1.
Substitute:	Danger Level:	2.
Location Code:	Ordering Level:	3.
	Ordering Quantity:	

Date	Receipts				Issues				Balance			On Order		Reserved	
	Doc. No.	Qty.	Rate	Value	Doc. No.	Qty.	Rate	Value	Qty.	Rate	Value	P.O. No.	Qty.	G.R. No.	Qty.

STORES LEDGER

*Difference between Bin Card and Stores Ledger*

<i>Bin Card</i>	<i>Stores Ledger</i>
(a) It is a quantity record	(a) It is a record of quantity and value.
(b) It is kept inside the stores	(b) It is kept outside the stores.
(c) It is maintained by the store - keeper	(c) It is maintained by the accounts department.
(d) The postings are done before the transactions take place	(d) The postings are done after the transactions take place.
(e) Each transaction is individually posted	(e) Transactions may be posted periodically and in total.

*Reconciliation of Bin Card and Stores Ledger*

Though there should not be any difference between the balances shown in the Bin Card and Stores Ledger, differences may arise due to the following reasons:

- (a) Arithmetical error in working out the balances.
- (b) Posting in the issue column when it should have been posted in the receipts column.
- (c) Non-posting of a voucher either in the Bin Card or the Stores Ledger.
- (d) Posting in the wrong Bin Card or Stores Ledger sheet.
- (e) Material may be issued or received on loan/approval. They may be entered in the Bin Card for the purpose of record. These transactions do not find a place in Stores Ledger.

The differences should be reconciled at regular intervals.

*Continuous Physical Stock Verification*

The stores accounts reveal what the balances should be and a physical verification reveals the actual stock position.

Under this system of verification, the total number of man-days available for verification is calculated. The items to be verified per man-day is selected by classifying

the various items into groups depending upon the time required. The stock verification staff plan the programme and divide the work among themselves. The plan is such that all the items are verified in the year. Items of small value may be verified twice or more in a year. Bulky items are usually verified when stocks are comparatively low.

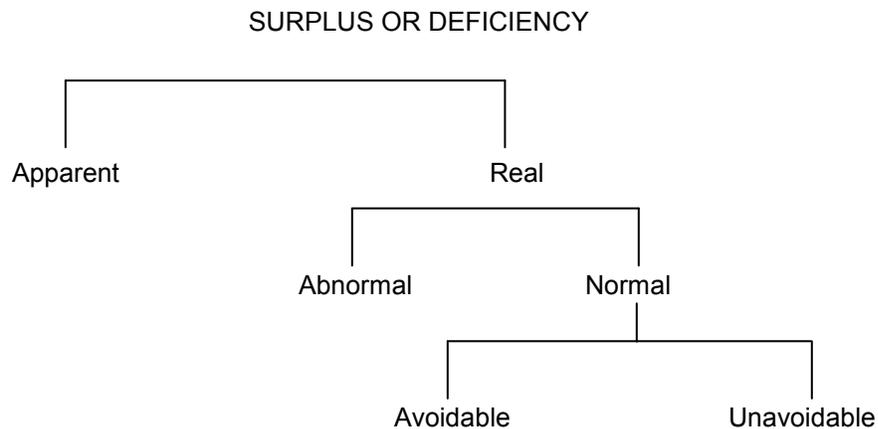
There is an element of surprise and sometimes the stock verifier knows of the items to be verified only on the actual date of verification. Stock not recorded should not be mixed up with the stock. After counting or weighing the results are recorded.

*Reasons for Surpluses and Deficiencies in Stock-taking and Accounting thereof*

Differences in stock arise occasionally. The difference in the stock verification sheet should be verified with the bin card balance. There may be differences between the Stores Ledger and the Bin Card. But the Bin Card reflects the stock in hand and hence no adjustment is needed. The balance in Stores Ledger and Bin Card should be reconciled first.

A surplus/deficiency should be kept at the minimum. A deficiency may be due to malpractices in stores while surplus may encourage malpractices. Wherever possible preventive measures should be taken to prevent their recurrence in future.

The difference may be analysed as follows:



If there is difference between the Bin Card and physical stock, it may be due to clerical mistake in posting and casting in the Bin Card or due to inaccuracies in measuring standards and conversion ratios used. This difference is apparent and either the Bin Card has to be corrected or the stocks re-verified.

The first stage of analysis is to distinguish between the differences due to normal and abnormal causes. Differences are abnormal when they are beyond the control of the stores management and hence written off, e.g., fire, riot, burglary, etc. If the differences are due to normal causes, the stores management should take effective steps to prevent them.

Differences due to normal causes may be avoidable or unavoidable. Some of the avoidable causes are:

- (i) Incorrect measurement of issues
- (ii) Carelessness in material handling

- (iii) Improper storage of material
- (iv) Pilferage, theft etc.
- (v) Stores misplaced
- (vi) Errors in stock-taking.

The storekeeper is responsible for all differences arising out of avoidable causes and he should ensure that adequate steps are taken to reduce and eliminate the differences. Sometimes, even though the store keeping is efficient, some surplus or deficiency occur. These are called unavoidable. The storekeeper should be able to foresee the nature, the magnitude of the differences and lay down proper accounting methods.

Some of the unavoidable causes are:

- (i) Handling losses arising out of issuing in small units, e.g., starch powder in bags.
- (ii) Loss or gains arising out of atmospheric conditions; certain chemicals gain in weight and others lose weight.
- (iii) Gains that arise due to seasoning and preservation of materials when specially processed, e.g., wooden and leather items are seasoned in oil.

#### *Accounting of Surpluses and Deficiencies*

- (i) Apparent differences need no adjustment. Either the Bin Card is corrected or the stocks are re-verified.
- (ii) Differences due to abnormal causes are written off to profit and loss account and do not form part of manufacturing cost.
- (iii) Differences due to avoidable causes should be valued and adjusted through the stores consumption account and recovered in cost as an item of stores overhead expenses.
- (iv) Differences due to unavoidable causes get accounted for as a part of the material cost itself. Through past observations, the loss or gain percentage is worked out. Whenever material is issued, adjustment is made by this percentage. Stocks are adjusted in a similar manner. This percentage should be reviewed and corrected periodically.

Any difference between the anticipated and actual difference is noted on a stores adjustment note and the difference is transferred to overhead or the Costing Profit and Loss Account or Profit and Loss Account as the case may be.

#### **10.7 Use of control ratios**

(a) *Inventory turnover ratio*: It helps management to avoid capital being locked up unnecessarily. This ratio reveals the efficiency of stock-keeping.

Inventory turnover ratio is given by the formula:

$$\frac{\text{Cost of material consumed}}{\text{Cost of average stock held during the period}}$$

$$\text{Cost of average stock} = \frac{\text{Cost of opening stock} + \text{Cost of closing stock}}{2}$$

The inventory turnover ratio can be calculated (in days) as follows:

$$\frac{\text{Days during the period}}{\text{Inventory turnover ratio}}$$

This will reveal the number of days for which the stocks are held.

(b) *Input-output ratio*: It is the ratio of the quantity of input of material to production. This ratio enables comparison of actual consumption and standard consumption, indicating whether the usage of material is favorable or adverse.

### 10.8 Review of slow and non-moving items

The money locked up in inventory is money lost to the business. If more money is locked up, lesser is the amount available for working capital and the cost of carrying inventory also increases.

Stock turnover ratio should be as high as possible. Loss due to obsolescence should be eliminated or these items used in some profitable work. Slow moving stocks should be identified and speedily disposed of. The speed of movement should be increased. The turnover of different items of stock can be analysed to find out the slow moving stocks. The percentage of slow-moving stores is given by the formula:

$$\frac{\text{Slow moving stores}}{\text{Total Inventory}}$$

Materials become useless or obsolete due to changes in product, process, design or method of production, slow moving stocks have a low turnover ratio. Capital is locked up and cost of carrying have to be incurred. Hence management should take effective steps to minimise losses.

## 11. ISSUE OF MATERIALS

While issuing materials, the following points should be kept in mind:

(a) *Planning of material requirement*: All requirements of materials should be thoroughly planned. The bill of materials gives estimates of different items of stores required.

(b) *Requisition of materials*: Based on the quantities mentioned in the bill of materials, materials are requisitioned. Materials should not be issued in excess of standards. If necessary, an additional bill of materials can be issued by competent authority.

(c) *Internal audit of issues*: All issues should be audited. Any excess/shortfall in issues should be explained and accounted for.

(d) *Control of wastage*: Actual wastage should not exceed the standard wastage fixed. Wastages should be examined and any variance should be reported.

(e) *Issues of sundry items:* Certain stores are required in various departments. Either the requirement can be budgeted or order can be placed strictly on the basis of requirement.

## 12. MATERIAL (STORES) REQUISITION NOTE

A material requisition note is a formal written demand or request usually from the production department to the stores for the supply of specified materials, stores etc. It authorises the stores keeper to issue the requisitioned materials and record the same in the bin card. It contains information about the description, code, quantity of material and job or work order for which it is needed. It also contain columns for calculating the cost of material issues. Generally a material requisition note is prepared in triplicate. One copy is sent to the stores, one copy to the costing department and the third copy is retained by the department making the requisition for its future reference. A specimen of material requisition note is given below:

Material Requisition Note						
Department _____				No. _____		
Job/work order No. _____				Date _____		
S.No.	Description	Code No.	Quantity	Rate ₹	Amount ₹	Remarks
Foreman		Storekeeper		Cost Accountant		

## 13. BILL OF MATERIALS

A bill of materials is a comprehensive list of materials with specifications, material codes and quantity of each material required for a particular job, process or service. Substitute materials which may be used when the original materials are not available also indicated in the bill of materials. It is prepared by the production planning department or engineering department. It is a method of documenting materials required for execution of the specified job or work. A bill of materials acts as an authorisation to the stores department in procuring the materials and all materials listed on the bill are sent to the production department. Generally four copies of a bill of materials are prepared. One copy is sent to the stores department, one copy to the purchase department, one copy to the costing department and the fourth copy is retained by the production planning department for future reference. The following advantages may be derived from a bill of materials:

- It serves as an advance intimation to stores department about the raw material requirement.
- Suitable action for purchase of materials can be taken on the basis of the bill of materials.

- (c) It is a good control measure on materials cost.
- (d) It serves the purpose of an indent or purchase requisition upon the purchase officer for the purchase of materials required for a particular job.
- (e) The material cost to be charged to a particular unit, job or process can be easily determined before hand.
- (f) It helps in submission of tenders and quotations.
- (g) It also serves as a work order to the production department and a document for computing the cost of material for a particular job or work order to the cost department.

A specimen of the bill of materials is as follows:

<b>Bill of Materials</b>						
Job/work order No. _____			No. _____			
Description of job _____			Date _____			
S.No.	Description	Code No.	Details of Issue			Remarks
			Date	Rate ₹	Amount ₹	
Prepared by		Stores department		Cost department		
Checked by						

**Notes:**

- (i) Details of issues regarding date and quantity will be filled by the stores department.
- (ii) Rate and amount columns will be completed by the cost department.

**14. CONTROL OF MATERIAL ISSUES**

Material issues are controlled to ensure that

- (a) Every issue is authorised,
- (b) Every issue is correctly accounted for,
- (c) Every issue is properly priced,
- (d) It is properly charged to costs,
- (e) It is reconciled with the financial books.

(a) Issue of materials is authorised when the indenter has the authority to draw the materials, authority for the quantity drawn and the authority for drawing it from a particular lot. The authority given to people at different levels depend on the size of the concern and number of requisitions made daily. Material should be issued only when there are material requisition slips. Three of these slips are prepared. One is

sent to the stores, one to the stores accounting section and one to the concerned department.

The bill of materials lists out the quantities of materials required. Only when the quantities are sanctioned in the bill, it is issued.

In job costing industries certain materials are earmarked for specific job/urgent orders. These should be issued only to those specified jobs.

(b) Every issue should be properly accounted in the stores and stores accounting section with respect to the quantity and also the number of documents used.

(c) There are many methods of pricing issues. The method adopted depends on the accounting method followed for pricing its products and closing stocks. Hence due consideration has to be given to the method chosen and the following factors have to be satisfied :

- (i) The issue price should recover the cost of purchase.
- (ii) It should reflect the market price.
- (iii) It should not cause significant variations in cost from period to period.
- (iv) Closing stock valuation should not necessitate lot of adjustments.

(d) The issue must be correctly charged to the cost centre/job. The material requisition slips should be analysed according to the cost centres. All production orders, service orders, stock order should be covered. The cost centres established should enable fixing of responsibility.

The total in the material cost summary should tally with the total in the stores ledger. The material cost abstract ensures that issues are correctly charged to costs as it is prepared on a daily basis.

(e) As both the financial books and stores ledger get information from the same source, there should not be any difference between the two. But due to omissions and commissions in posting, differences may occur. By reconciling the two periodically the difficulties arising in the year while stock taking is obviated.

## 15. PRICING OF MATERIAL ISSUES

When materials are issued to production department, a difficulty arises regarding the price at which materials issued are to be charged. The same type of material may have been purchased in different lots at different times at several different prices. This means that actual cost can take on several different values and same method of pricing the issue of materials must be selected.

There are numerous methods of pricing issues. They may be classified as follows:

### *I. Cost Price Methods*

- (a) Specified Price
- (b) First-in First-out (FIFO)
- (c) Last-in First-out (LIFO)
- (d) Highest-in First-out (HIFO)
- (e) Base Stock

### *II. Average Price Method*

- (a) Simple Average
- (b) Weighted Average
- (c) Periodic Simple Average
- (d) Moving Simple Average
- (e) Moving Weighted Average

### *III. Notional Price Methods*

- (a) Standard Price
  - (i) Current Standard
  - (ii) Basic Standard
- (b) Inflated Price
- (c) Market Price
  - (i) Replacement Price
  - (ii) Realisable Price

### 15.1 Cost Price Methods

#### (a) Specified Price (Identifiable) Method

Sometimes materials are purchased to be utilised in a particular job or issues can be identified with a particular receipt. In these cases, the actual purchase price can be charged. This method can be adopted when prices are stable or when the materials are covered by price control orders. This method has limited application only.

#### (b) First-in First-out (FIFO) Method

This method is based on the assumption that materials which are purchased first are issued first. It uses the price of the first batch of materials purchased for all issues until all units from this batch have been issued. In other words the materials are issued at the oldest cost price listed in the stores ledger account and thus, the materials in stock are valued at the price of the latest purchases. It should be noted that the assumption of FIFO is only for accounting purpose i.e. the physical flow of materials need not necessarily be in the order of the flow of cost, though normally materials would be expected to move out of stock on approximately a FIFO basis because oldest stocks are usually used up first.

#### Example

##### Receipts

20th Oct. 500 kgs. @ 5.00 per kg.  
23rd Oct. 250 kgs. @ 5.50 per kg.

##### Issues

25th Oct. Issue of 600 kgs. will be valued as follows:  
500 kgs. @ ₹5 per kg.  
100 kgs. @ ₹5.50 per kg.

#### Advantages:

- (i) It is a good inventory management system since the oldest units are used first and inventory consists of the latest stock.
- (ii) It is logical.
- (iii) It is easy to understand and operate.
- (iv) It facilitates inter-firm and intra-firm comparisons.
- (v) Valuation of inventory and cost of finished goods is consistent and realistic.

#### Disadvantages:

- (i) The cost of production is not linked to the current prices.
- (ii) If prices are rising, production cost is understated. But if stock turnover rate is high, the inventory will reflect current prices. The effect of current market prices is not revealed in issues when prices are rising.
- (iii) It does not present the true picture when many lots are purchased at different prices. The calculation become complicated.

- (iv) The pricing of material returns is difficult.
- (v) High inflation creates problems in replacing used materials, this aspect is not dealt with in FIFO.
- (vi) Usually more than one price has to be adopted for a particular issue.
- (vii) Cost comparisons between two batches of production becomes difficult when issues are priced differently.

(c) *Last-in First out (LIFO) Method*

The principle adopted is that the materials used in production is from the latest purchase. The inventory is priced at the oldest costs. As the method applies the current cost of materials to the cost of units, it is also known as the replacement cost method. It is the most significant method in matching cost with revenue in the income determination procedure.

**Example**

Assuming the same facts as given under FIFO, the issues will be valued as follows:

250 kgs. @ ₹5.50 per kg.

350 kgs. @ ₹5.00 per kg.

*Advantages:*

- (i) It is simple and useful when transaction are few.
- (ii) It is a good method of avoiding tax.
- (iii) It is a systematic method. It matches current costs with current revenues in a better way.
- (iv) It reveals real income in times of rising prices.
- (v) It minimises unrealised inventory gains and losses and tends to stabilise reported operation profits especially when the industry is prone to sharp price fluctuations.

*Disadvantages:*

- (i) When rates of material receipts are highly fluctuating, the method becomes complicated.
- (ii) More than one price may have to be adopted for an issue.
- (iii) Cost of different batches vary greatly, making inter-firm and intra-firm comparison difficult.
- (iv) The stocks require to be adjusted during falling prices.
- (v) Unless purchases and sales occur in equal quantities the current costs cannot be easily matched with current revenue.
- (vi) The company can time the purchases to cause high or low costs thus changing reported income at will.
- (vii) Existing profit sharing and bonus can be effected by an accounting change. Employees will have difficulty in understanding the cause for these changes.

*(d) Highest-in First-out (HIFO) Method*

The principle adopted is that costliest materials are issued first, Inventory is valued at the lowest possible price. The method requires detailed records. It is mainly used for monopoly products or cost plus contracts. When stocks are undervalued, a secret reserve is created.

*(e) Base Stock Method*

A certain minimum stock of a material is always carried and is priced at the original cost (usually at the lowest purchase price). The portion of stock above this level is issued and priced under any one of the methods.

The disadvantages of this method is that the stock may be under valued and hence the computation of return on capital will not be reliable.

**15.2 Average Price Methods***(a) Simple Average Method*

The simple average is the average of prices ignoring the quantities involved. It can be used when the prices are normally stable and the stocks purchased are in equal quantities or the stock value is small. It is calculated by dividing the total rates of materials by the number of rates of prices. A new average is worked out after every receipt.

**Example:**

Assuming the facts given in FIFO the average will be:

$$\text{₹} \frac{5 + 5.5}{2} = \text{₹} 5.25 \text{ per kg.}$$

*(b) Weighted Average Method*

In this method, the total quantities and total costs are taken into account while calculating the average price. It is calculated after every purchase by adding the quantity received to the stock in hand and the cost of this purchase to the cost of stock in hand. The total cost is divided by the total quantity to arrive at the value. This method avoids price fluctuations and reduces the number of calculations and gives an acceptable figure for stock.

**Example**

The weighted average will be calculated as follows (with previously given data):

$$\frac{5 \times 500 + 5.5 \times 100}{600} = \text{₹} 5.083$$

*Advantages:*

- (i) It is logical and consistent.
- (ii) Changes in prices do not affect issues and inventory.
- (iii) The values reflect actual costs.

*Disadvantages*

- (i) It involves considerable amount of clerical work.
- (ii) When prices change frequently, it is inconvenient and complex.
- (iii) As it is not the actual price, it is not realistic.

*(c) Periodical Simple Average Method*

Some companies may price materials by taking average of the prices of all receipts during a period, e.g., a month, a week, etc. for the subsequent period. Only those prices - relevant to the period is taken into account. Purchases made during the period and closing stock are taken into account.

**Example**

The receipts during the month were at the rates of ₹5, ₹5.50, ₹6 and ₹4.50. The periodic simple average will be:

$$\frac{\text{Total Prices of Materials}}{\text{Total Number of Prices}}$$

$$\frac{5 + 5.50 + 6 + 4.50}{4} = ₹5.25$$

*Disadvantages:*

- (i) Pricing of issues ignores heavy fluctuations in price during the current period.
- (ii) it is not an exact cost method.
- (iii) It involves heavy clerical work.

*(d) Periodic Weighted Average Method*

The average price is calculated periodically and not every time the material is received. It is calculated by dividing the the total value of materials purchased during a period by the total quantity purchased.

**Example**

If the total receipts during a month is 1,000 kg. costing ₹25,000, the periodic weighted average will be

$$\frac{₹ 25,000}{1,000} = ₹25 \text{ per kg.}$$

*Advantages:*

- (i) Clerical costs are reduced.
- (ii) It is useful in process costing.
- (iii) The issue price is not affected by short-term fluctuations.

*Disadvantages:*

- (i) At the end of the accounting period, heavy clerical work is involved.
- (ii) Violent fluctuations are ignored till the end of the period.
- (iii) Closing stock can be erroneously valued and nil stock may have a residual value.

*(e) Moving Simple Average Method*

In this method, periodic simple average prices are further averaged. By dividing periodic average prices by the number of periods taken, the moving average is calculated. The period chosen should cover the period in which the material is issued.

The value of closing stock may be under valued or over valued. When prices are rising, the issue price worked out is lower than the periodic average prices for the period concerned and *vice versa*.

**Example**

<i>Month</i>	<i>Periodic Average Price (₹)</i>	<i>Moving Average Price (₹)</i>
January	2.50	
February	2.60	2.60
March	2.70	2.72
April	2.85	2.85
May	3.00	3.03
June	3.25	

*(f) Moving Weighted Average Method*

The material issue price is calculated by dividing the total of the periodic weighted average prices for a number of periods by the total number of such periods.

**15.3 Notional Price Methods***(a) Standard Price Method*

The price of issues for each item is pre-determined for a stated period taking into account all the factors affecting price, e.g., market trends, transportation costs, etc. Standard prices are determined for each material. All issues and inventory are kept at the standard price. These should be revised from period to period.

Standard can be basic or current standard. The basic standard is fixed for long periods and it gives the ideal price. It assists forward planning. Current standard keeps costs of the products adjusted to prevailing trends in markets. Basic standard on the other hand, helps to study trends in production costs over a period.

The difference between standard and actual is transferred to the purchase price variance account.

*Advantages:*

- (i) It simplifies accounting as only quantities are recorded.
- (ii) As only one rate is adopted, inconsistency is avoided.
- (iii) It helps to determine purchase efficiency. If actual cost is more than the standard than there is unfavourable purchasing efficiency and *vice versa*.
- (iv) It is simple to operate.
- (v) It provides stability to the costing system.

*Disadvantages:*

It does not reflect the actual or expected cost but only a target.

*(b) Inflated Price Method*

Inflated price includes carrying costs, losses due to evaporation etc. It aims to recover full costs of materials purchased.

*(c) Market Price Method*

Materials may be issued at the replacement price. The replacement price is the cost of the same type of materials in the market at any given time.

*Advantages:*

- (i) It measures results correctly and accurately as current revenues are matched against current costs.
- (ii) It differentiates between holding gains and operating gains.
- (iii) A realistic and competitive selling price can be determined.

*Disadvantages:*

- (i) In the absence of a market price, replacement price cannot be determined.
- (ii) As it is not based on actual cost, they may increase the confusion and complication in accounting.

The replacement price is used in respect of items used in manufacturing whereas the realisable price is used for items kept in stock.

The realisable price is useful for calculating the issue price of obsolete and slow-moving stores. If issues are priced at current market price, price reduced due to bulk purchases, are not reflected.

The market price method introduces elements of uncertainty and involves excessive classical labour to maintain records of latest prices for various items.

*Selection of Material Pricing Method*

The various method of pricing issues have merits and demerits. The choice of any method depends on many factors which can be summarised as under :

- (i) the frequency of purchases.
- (ii) price fluctuations and its range.
- (iii) method of stock valuation.
- (iv) customs and practices followed in the industry, whether uniform costing system is being followed.
- (v) stock turnover rate.
- (vi) percentage cost of raw materials to total cost of products.

- (vii) economic order quantity.
- (vii) effect of pricing method on tax payable.
- (ix) the accuracy required and the accuracy which would be obtained.
- (x) clerical work involved.
- (xi) costing system adopted.
- (xii) traceability of issue to purchase lot.
- (xiii) frequency of receipts and issues.
- (xiv) whether standard costing system is adopted.
- (xv) the nature of business.
- (xvi) the possibility of using different methods for different classes of items.

In addition to the above, the following factors have to be satisfied:

- (i) The purchase cost is covered.
- (ii) The issue price reflects the market price,
- (iii) There is no significant variation in cost from period to period, and
- (iv) The system does not necessitate heavy adjustment at the time of valuing closing stock.

### Illustration 6

The following is a summary of the receipts and issues of materials in a factory during a month:

Date	
1	Opening balance 500 units at ₹25 per unit.
3	Issue 70 units
4	Issue 100 units
8	Issue 80 units
13	Received 200 units @ ₹24.50 per unit.
14	Returned to store 15 units @ ₹24 per unit
16	Issue 180 units
20	Received 240 units @ ₹24.75 per unit
24	Issue 304 units
25	Received 320 units @ ₹24.50 per unit
26	Issue 112 units
27	Returned to store 12 units @ ₹24.50 per unit
28	Received 100 units at ₹25 per unit.

Work out on the basis of „FIFO’. It was revealed that on 15th there was a shortage of 5 units and on 27th of 8 units.

**Solution:**

Shortage can either be adjusted in works overhead or the issue price enhanced accordingly. If the shortage is abnormal, it is to be charged to Costing Profit and Loss Account.

**STORES LEDGER ACCOUNT**

Material Code \_\_\_\_\_ Bin No. \_\_\_\_\_ Maximum Level \_\_\_\_\_  
Type or Size \_\_\_\_\_ Location Code \_\_\_\_\_ Minimum Level \_\_\_\_\_

Receipts					Issues					Balance		
Date	P.O. No.	Qty.	Rate (₹)	Amount (₹)	Date	M.R. No.	Qty.	Rate (₹)	Amount (₹)	Qty.	Rate (₹)	Amount (₹)
1st	Balance									500	25.00	12,500
					3rd		70	25.00	1,750	430	25.00	10,750
					4th		100	25.00	2,500	330	25.00	8,250
					8th		80	25.00	2,000	250	25.00	6,250
13th		200	24.50	4,900						250	25.00	6,250
										200	24.50	4,900
14th	Refund	15	24.00	360						250	25.00	6,250
										200	24.50	4,900
										15	24.00	360
					15th	Shortage	5	25.00	125	245	25.00	1,625
										200	24.50	4,900
										15	24.00	360
					16th		180	25.00	4,500	65	25.00	1,625
										200	24.50	4,900
										15	24.00	360
20th		240	24.75	5,940						65	25.00	1,625
										200	24.50	4,900
										15	24.00	360
										240	24.75	5,940
					24th		65	25.00	1,625			
							200	24.50	4,900			
						304	15	24.00	360			
							24	24.75	594	216	24.75	5,346
25th		320	24.00	7,680						216	24.75	5,346
										320	24.00	7,680
					26th		112	24.75	2,772	104	24.75	2,574
										320	24.00	7,680
27th	Refund	12	24.50	294						104	24.75	2,574
										320	24.00	7,680
										12	24.50	294

					27th	Shortage	8	24.75	198	96	24.75	2,376
										320	24.00	7,680
										12	24.50	294
28th		100	25.00	2,500						96	24.75	2,376
										320	24.00	7,680
										12	24.50	294
										100	25.00	2,500

CLOSING STOCK: 528 Units = ₹12,850.

### Illustration 7

From the following you are required to prepare a statement showing the issues made under LIFO method:

Date	Opening Balance 100 units at ₹10 each
1	Received 200 units at ₹10.50 each
2	Received 300 units at ₹10.60 each
4	Issued 400 units to Job A vide MR No. 3
6	Issued 120 units to Job B vide MR No. 4
7	Received 400 units at ₹11 each
10	Issued 200 units to Job C vide MR No. 5
12	Received 300 units at ₹11.40 each
13	Received 200 units at ₹11.50 each
15	Issued 400 units to Job D vide MR No. 6

### Solution

#### STORES LEDGER ACCOUNT

Receipts					Issues					Balance		
Date	P.O. No.	Qty.	Rate (₹)	Amount (₹)	Date	M.R. No.	Qty.	Rate (₹)	Amount (₹)	Qty.	Rate (₹)	Amount (₹)
										100	10.00	1,000
1st		200	10.50	2,100						100	10.00	1,000
										200	10.50	2,100
2nd		300	10.60	3,180						100	10.00	1,000
										200	10.50	2,100
										300	10.60	3,180
					4th	3	(400)					
							300	10.60	3,180	100	10.00	1,000
							100	10.50	1,050	100	10.50	1,050
					6th	4	(120)					
							100	10.50	1,050	80	10.00	800
							20	10.00	200			
7th		400	11.00	4,400						80	10.00	800
										400	11.00	4,400
					10th	5	200	11.00	2,200	80	10.00	800
										200	11.00	2,200
12th		300	11.40	3,420						80	10.00	800

										200	11.00	2,200
										300	11.40	3,420
13th		200	11.50	2,300						80	10.00	800
										200	11.00	2,200
										300	11.40	3,420
					15th	6	(400)			200	11.50	2,300
							200	11.50	2,300	80	10.00	800
							200	11.40	2,280	200	11.00	2,200
										100	11.40	1,140

CLOSING STOCK: 380 Units, Value: ₹4,140.

### Illustration 8

Prepare a statement showing the pricing of issues, on the basis of (a) Simple Average, and (b) Weighted Average Methods from the following information pertaining to material 'X'.

#### Date

- 1 Purchased 100 units @ ₹10.00 each.
- 2 Purchased 200 units @ ₹10.20 each.
- 5 Issued 250 units to Job A vide MR No. 1
- 7 Purchased 300 units @ ₹10.50 each
- 10 Purchased 200 units @ ₹10.80 each
- 13 Issued 200 units to Job B vide MR No. 2
- 18 Issued 200 units to Job C vide MR No. 3
- 20 Purchased 100 units @ ₹11.00 each.
- 25 Issued 150 units to Job D vide MR No. 4.

#### Solution:

#### SIMPLE AVERAGE METHOD

#### STORES LEDGER ACCOUNT

Receipts					Issues					Balance	
Date	P.O. No.	Qty.	Rate (₹)	Amount (₹)	Date	M.R. No.	Qty.	Rate (₹)	Amount (₹)	Qty.	Amount (₹)
1st		100	10.00	1,000						100	1,000
2nd		200	10.20	2,040						300	3,040
					5th	1	250	$\frac{10 + 10.20}{2}$	2,525	50	515
7th		300	10.50	3,150						350	3,665
10th		200	10.80	2,160						550	5,825
					13th	2	200	$\frac{10.20 + 10.50 + 10.80}{3}$	2,100	350	3,725

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20th	100	11.00	1,100	18th	3	200	$\frac{10.50 + 10.80}{2}$	2,130	150	1,595
				25th	4	150	$\frac{10.80 + 11.00}{2}$	1,635	100	1,060

CLOSING STOCK: 100 Units, Value: ₹ 1,060.

**WEIGHTED AVERAGE METHOD**

Receipts					Issues					Balance		
Date	P.O No.	Qty.	Rate (₹)	Amount (₹)	Date	M.R No.	Qty.	Rate (₹)	Amount (₹)	Qty.	Rate (₹)	Amount (₹)
1 <sup>st</sup>		100	10.00	1,000						100	10.00	1,000.00
2 <sup>nd</sup>		200	10.20	2,040						300	10.13	3,040.00
7 <sup>th</sup>		300	10.50	3,150	5th	1	250	10.13	2,533.30	50	10.13	506.70
10th		200	10.80	2,160						350	10.45	3,656.70
					13 <sup>th</sup>	2	200	10.58	2,116.00	550	10.58	5,816.70
					18th	3	200	10.58	2,116.00	350	10.58	3,700.70
20th		100	1,100	1,100	25th	4	150	10.74	1,611.00	150	10.58	1,584.70
										250	10.74	2,684.70
										100	10.74	1,073.70

CLOSING STOCK: 100 Units, Value: ₹1073.70.

$$\text{Rate} = \frac{3,040}{300} = ₹10.13$$

$$\text{Rate} = \frac{5,816.70}{550} = ₹10.58$$

$$\text{Rate} = \frac{3,656.70}{350} = ₹10.45$$

$$\text{Rate} = \frac{2,684.70}{250} = ₹10.74$$

**Illustration 9**

The stock of material in hand on 1st April was 400 units at ₹50 per unit. The following receipts and issues were recorded. Prepare a Stores Ledger Account under 'Base Stock Method' both by adopting FIFO and LIFO Methods, Base stock being 100 units.

Date	
2 April	Purchased 100 units @ ₹55 each
6 April	Issued 400 units
10 April	Purchased 600 units @ ₹60 each
13 April	Issued 500 units
20 April	Purchased 500 units @ ₹65 each
25 April	Issued 600 units
10 May	Purchased 800 units @ ₹70 each
12 May	Issued 500 units
13 May	Issued 200 units

15 May Purchased 500 units @ ₹75 each  
 12 June Issued 400 units  
 15 June Purchased 300 units @ ₹80 each.

**Solution:**

Base Stock with FIFO and LIFO Stores Ledger Account No..... Maximum No.....  
 Material..... Bin No..... Minimum No.....  
 Code..... Location..... Base Stock = 100 units  
 Type and size..... Folio.....

Receipts					Issues							Balance						
Date	P.O. No.	Qty.	Rate (₹)	Amt. (₹)	Date	M.R. No.	Quantity	FIFO Rate (₹)	LIFO Rate (₹)	FIFO Amt. (₹)	LIFO Amt. (₹)	Quantity	FIFO Rate (₹)	LIFO Rate (₹)	FIFO Amt. (₹)	LIFO Amt. (₹)		
1st Apr.	Bal. B/d											400	50	50	20,000	20,000		
2nd Apr.	-	100	55	5,500								400	50	50	20,000	20,000		
					6th Apr.	-	400	300	50	50	15,000	15,000	100	55	55	5,500	5,500	
								100	55	55	5,500	5,500	100	50	50	5,000	5,000	
10th Apr.	-	600	60	36,000								100	50	50	5,000	5,000		
					13th Apr.	-	500		60	60	30,000	30,000	600	60	60	36,000	36,000	
												100	50	50	5,000	5,000		
20th Apr.	-	500	65	32,500								100	60	60	6,000	6,000		
												100	100	50	50	5,000	5,000	
												100	500	60	65	6,000	32,500	
					25th Apr.	-	600	500	65	65	32,500	32,500	500	100	65	60	32,500	6,000
								100	60	60	6,000	6,000	100	50	50	5,000	5,000	
10th May	-	800	70	56,000								100	50	50	5,000	5,000		
					12th May	-	500		70	70	35,000	35,000	800	70	70	56,000	56,000	
												100	50	50	5,000	5,000		
					13th May	-	200		70	70	14,000	14,000	300	70	70	21,000	21,000	
												100	50	50	5,000	5,000		
15th May	-	500	75	37,500								100	70	70	7,000	7,000		
												100	100	50	50	5,000	5,000	
												100	500	70	75	7,000	37,500	
												500	100	75	70	37,500	7,000	

					12th June	-	400	100	70	75	7,000	30,000	100	100	50	50	5,000	5,000
								300	75		22,500		200	100	75	75	15,000	7,500
													100	100	70	70	7,000	7,000
15th June	-	300	80	24,000									100	100	50	50	5,000	5,000
													200	300	75	80	15,000	24,000
													300	100	80	75	24,000	7,500
													100	100	70	70	7,000	7,000

Base Stock: Closing Stock of Material (FIFO) 600 units = ₹44,000

(LIFO) 600 units = ₹43,500

### Illustration 10

Prepare Stores Ledger Account showing pricing of material issues on Replacement Price basis, from the following particulars.

Opening Balance 400 units @ ₹4 each.

10th March Received 100 units @ ₹4.10 each.

15th March Issued 300 units to job XY vide M.R. No. 1

17th March Received 200 units @ ₹4.30 each.

20th March Issued 250 units to job AB vide M.R. No. 2.

25th March Received 400 units @ ₹4.50 each.

26th March Issued 200 units to job JK vide M.R. No. 3.

27th March Received 100 units @ ₹4.60 each.

30th March Issued 300 units to job PQ vide M.R. No. 4.

Replacement price on various dates: 15th March ₹4.20; 20th March ₹4.40; 26th March ₹4.60 and 30th March ₹4.80.

### Solution:

#### STORES LEDGER ACCOUNT

Material..... Bin No..... Folio.....

Size..... Code..... Maximum No.....

Location..... Minimum No.....

Receipts					Issues					Balance	
Date	P.R. No.	Qty.	Rate (₹)	Amt. (₹)	Date	P.R. No.	Qty.	Rate (₹)	Amt. (₹)	Qty.	Amt. (₹)
1st Mar.										400	1,600
10th Mar.	-	100	4.10	410	-	-	-	-	-	500	2,010
-	-	-	-	-	15th Mar.	1	300	4.20	1,260	200	750
17th Mar.	-	200	4.30	860	-	-	-	-	-	400	1,610

-	-	-	-	-	20th Mar.	2	250	4.40	1,100	150	510
25th Mar.	-	400	4.50	1,800	-	-	-	-	-	550	2,310
-	-	-	-	-	26th Mar.	3	200	4.60	920	350	1,390
27th Mar.	-	100	4.60	460	-	-	-	-	-	450	1,850
-	-	-	-	-	30th Mar.	4	300	4.80	1,440	150	410

Closing Stock: 150 Units; Value ₹ 410.

### Illustration 11

Stocks are issued at standard price and the following transactions occurred in a specific material:

*Date*

April

1	Stock	10 tons	at ₹240 per ton
4	Purchased	5 tons	at ₹260 per ton
5	Issued	3 tons	
12	Issued	4 tons	
13	Purchased	3 tons	at ₹250 per ton
19	Issued	4 tons	
26	Issued	3 tons	
30	Purchased	4 tons	at ₹280 per ton
30	Issued	3 tons	

The debit balance of price variation on 1st April was ₹20. Show the stock account for the material for the month of April indicating how would you deal with the difference in material price variance, while preparing the Profit and Loss Account for the month.

#### Solution:

Calculation of Standard Price

Value of Opening stock = 10 x ₹240	₹ 2,400
Add: Price variance, not yet transferred to Costing P & L A/c	<u>20</u>
Total value of 10 tons	2,420

∴ Standard price for issue per ton = ₹242

#### STORE LEDGER ACCOUNT

Material..... Bin No..... Maximum No.....  
Code..... Location..... Minimum No.....  
Type and size..... Folio.....

Receipts					Issues					Balance	
Date	P.O. No.	Qty.	Rate (₹)	Amount (₹)	Date	M.R.O. No.	Qty.	Rate (₹)	Amount (₹)	Qty.	Amount (₹)
1st Apr.	Bal.	-	-	-	-	-	-	-	-	10 tons	2,400

4th Apr.	-	5 tons	260	1,300	-	-	-	-	-	15 tons	3,700
-	-	-	-	-	5th Apr.	-	3 tons	242	726	12 tons	2,974
-	-	-	-	-	12th Apr.	-	4 tons	242	968	8 tons	2,006
13th Apr.	-	3 tons	250	750	-	-	-	-	-	11 tons	2,756
-	-	-	-	-	19th Apr.	-	4 tons	242	968	7 tons	1,788
-	-	-	-	-	26th Apr.	-	3 tons	242	726	4 tons	1,062
30th Apr.	-	4 tons	280	1,120	-	-	-	-	-	8 tons	2,182
-	-	-	-	-	30th Apr.	-	3 tons	242	726	5 tons	1,456
		12		3,170			17		4,114		

**Note:** As the issues are priced at standard rate of ₹242 per ton the difference on account of this policy, between actual and standard value of closing stock, would be transferred to Costing Profit and Loss Account and would be debited to Material Price Variance.

Closing stock - Standard 5 tons @ ₹242	= ₹1,210
Actual 5 tons	= ₹1,456
∴ Difference (Adverse)	= ₹ 246

Material Control A/c	Dr. 4,114	
Material Price Variance A/c	Dr. 246	
To Cost Ledger A/c		4,360

### Illustration 12

Using the following data, compute (i) Closing Inventory and (ii) Cost of sales under 'current purchasing power' (CPP) method assuming that the firm is following LIFO method of inventory valuation:

Inventory as on 1/04/2010:	₹ 2,40,000
Purchases during 2010:	₹ 14,40,000
Inventory as on 31/03/2011:	₹ 3,60,000
Price index as on 01/04/2010:	100
Price index as on 31/03/2011:	130
Average price Index for 2010:	120

### Solution:

The converted amount of closing stock under CPP considering LIFO method :

Value of Closing Stock = ₹3,60,000

Out of the above, ₹2,40,000 is deemed to be from the opening stock and the balance ₹1,20,000 from the current purchases since LIFO method is being followed.

Relevant conversion factor for ₹2,40,000

$$= ₹2,40,000 \times 130/100 = ₹3,12,000$$

The conversion factor for the balance ₹1,20,000

$$= ₹1,20,000 \times 130/120 = ₹1,30,000$$

$$\text{Value of closing Stock under CPP} = ₹3,12,000 + ₹1,30,000 = ₹4,42,000$$

Calculation of Cost of Sales under CPP when LIFO method of inventory valuation is used:

	<i>Historical Cost Basis</i>	<i>Conversion Factor</i>	<i>Converted Amount</i>
	₹		₹
Inventory as on 01/04/2010	2,40,000	130/100	3,12,000
Add: Purchases	<u>14,40,000</u>	130/120	<u>15,60,000</u>
Total	16,80,000		18,72,000
Less: Closing Inventory as calculated above	<u>3,60,000</u>		<u>4,42,000</u>
	<u>13,20,000</u>		<u>14,30,000</u>

#### 16. PRICING OF MATERIAL RETURNS

Some materials issued to a job may be left over. These should be returned to the stores. A Material Return Note is prepared in triplicate. The jobs should be charged correctly and materials should not be lying around. Hence, these notes are prepared.

The rate adopted depends upon the nature of material returned. If the material is unused, it should be returned at the price originally charged and if the price is not available, then at the latest issue price. If the material is scrap/cut pieces, then the price will be related to the utility value of the material. If the firm is following the average price method, the return should be recorded at the original price but a new price has to be calculated for further issues.

<b>PQR CO. LTD.</b>						
MATERIAL RETURN NOTE						
Cost Centre:			S.No.:			
Job No.:			Date:			
Stores Code No.	Description	Unit	Qty.	Rate	Value	Remarks
_____ Foreman			_____ Store Keeper		_____ Store Accountant	

SPECIMEN OF MATERIAL RETURN NOTE

**17. MATERIAL TRANSFER NOTE**

Surplus material drawn against one job can be used in another instead of transferring it to the stores. These transfers are recorded in Material Transfer Note to charge individual jobs correctly.

The material transferred is, no doubt, in its original condition. Hence, it should be valued at the original issue price. If the price is not available, then it is priced at the latest issue price.

<b>PQR CO. LTD.</b>						
<b>MATERIAL TRANSFER NOTE</b>						
From Cost Centre: To Cost Centre:			S.No.: Date:			
Transfer from Job No.: _____ to Job No. _____						
Stores Code No.	Description	Unit	Qty.	Rate	Value	Remarks
_____ Sent by			_____ Received by		_____ Store Accountant	

## SPECIMEN OF MATERIAL TRANSFER NOTE

**18. MATERIAL LOSSES**

Losses of materials may arise during handling, storage or during process of manufacture. Such losses may be classified into two categories, i.e. normal loss and abnormal loss. Normal loss is that loss which has necessarily incurred and thus is unavoidable. Examples:

- Loss by evaporation
- Loss due to loading and unloading
- Loss due to breaking the bulk, etc.

Normal losses of material cannot be completely avoided but may be controlled to a limited extent.

Abnormal loss is that loss which arises due to inefficiency in operations, mischief, carelessness, etc. Examples –

- Theft or pilferage
- Breakage
- Fire, accident, flood, etc.
- Use of inaccurate instruments
- Improper storage, etc.

### *Accounting Treatment*

As a principle, all normal losses which are necessarily incurred are treated as a part of the cost and abnormal losses should not be included in the cost. In order to absorb normal material losses in cost, the rates of usable units are inflated so that such losses are absorbed. Alternatively, normal material loss is transferred to factory overhead. However abnormal loss of material are charged to Costing Profit and Loss account.

Materials losses may arise in the form of waste, scrap, spoilage or defectives.

#### **18.1 Waste**

Waste comprises of invisible loss, visible loss that cannot be collected and also the unsaleable portion of the collected loss. Waste is excluded from output quantity. Examples of waste are smoke, dust, gases, slag, etc.

In certain cases, the waste involves further costs of disposing it, e.g., cost incurred for disposal of effluent, obnoxious gases etc.

### *Accounting Treatment*

Standards are established for waste. Actual wastage is recorded and variation from standards are reported.

(i) *Normal Waste*: This is unavoidable and uncontrollable and treated as part of the product cost. The wastage cost is borne by the good units.

(ii) *Abnormal Waste*: It is valued as if the output is good. This cost is transferred to the Costing Profit and Loss Account.

Sometimes a demand may arise for the waste, e.g., it may be used as a substitute raw material. The selling price has to be suitably fixed on the basis of the market value of the raw material substituted.

#### **18.2 Scrap**

Scrap represents the unusable loss which can be sold. It is a residue which is measurable and has a minor value. It may result from the processing of materials, obsolete stock or defective parts. The sale value is credited to the concerned department which produced it. If the value is negligible, it is credited to the Costing Profit and Loss Account.

Scrap may arise in the form of turnings, boring's, filings etc. from metal; sawdust in timber industry, off-cuts and cut pieces in leather industry.

A committee may be constituted which classifies the various types of scrap, calculates their value and quantity and also determine the method of use/disposal.

### *Accounting Treatment*

- (i) Where the scrap has negligible value, it is charged to good units. Income is credited to other income.
- (ii) The sale value can be reduced from the material cost.

- (iii) If the scrap has very little value, only a quantity record need be kept.
- (iv) The cost is calculated by reducing the sale price by the selling cost and this sum is taken as a credit to the production overhead account.
- (v) Scrap arising in one job may be used in another. Such transfers should be properly recorded on material transfer notes.

The actual quantity of scrap is compared with the standard quantity. Excess scrap is investigated so that corrective action can be taken. At the designing stage, such a type, form and shape of material are chosen which will minimise the waste/scrap. Best equipments should be used and personnel should be properly trained.

### 18.3 Spoilage

Spoilage are those materials or components which are so damaged in the manufacturing process that they cannot be repaired or reconditioned. Some spoilage may be sold as seconds. If they are badly spoiled they can be sold as waste or scrap. Spoiled units do not attain the quality required and it is not economic to correct them.

Spoilage occurs due to some defect in operations or materials. Sometimes the entire production in a batch may have to be rejected or a part of it may be rejected.

#### *Accounting Treatment*

- (i) Loss due to spoilage can be debited to the job/product/process in which it occurred.
- (ii) It may be charged to factory overheads so that the loss is borne by all products.
- (iii) Abnormal loss which is unexpected but controllable should be transferred to the Costing Profit and Loss Account.

If spoilage occurs on a specific job/special order, it is charged to that job itself. Sometimes loss is prorated on the basis of percentage of scrap anticipated from each job.

The method of apportionment of spoilage between normal and abnormal is explained below:

Total input	5,000 units
Normal spoilage	5% of input
Total spoiled units	550 units
Total Cost	₹10,000
Sale value of spoilage	₹0.50 per unit
Standard output	Input less 5% of Spoilage 4,750 units
Cost of abnormal spoilage	$\frac{10,000 - (250 \times .5) \times 300}{4,750}$
	$\frac{10,000 - 125}{4,750} \times 300$
	$\frac{9,875 \times 300}{4,750} = ₹623.68$
Net cost of abnormal spoilage	₹623.68 – (300 x 0.50) = ₹473.68

The cost of abnormal spoilage is charged to Costing Profit and Loss Account and sale value is credited to Costing Profit and Loss Account.

The cost of normal spoilage is charged as product cost.

$$\begin{aligned} \text{Units Cost of production} &= \frac{\text{Rs. } 10,000 - 125 - 623.68}{5,000 - 550} \\ &= \frac{\text{Rs. } 9,251.32}{4,450} = \text{₹}2.0789 \end{aligned}$$

#### 18.4 Defectives

Defectives are that portion of the process loss which can be converted into a finished product by incurring more material and labour expenses. The additional expenses are added to the cost of manufacture and the rectified units to total units. Imperfections may arise because of sub-standard materials, bad workmanship, inadequate inspection, lack of plans, etc. It should be ensured that the benefit resulting from rectification is more than the cost incurred on rectifications.

Rectification of defective units may be done by the department in which it was produced. In larger concerns a separate Department may be set up for this purpose.

##### *Accounting Treatment*

- (i) Defectives inherent in the manufacturing process are classified as normal and treated in the following manner:
  - (a) The loss is charged to good products.
  - (b) The additional cost of rectification is charged to factory overheads and apportioned to various goods as part of the factory overhead.
  - (c) If a particular department is responsible for the additional cost of rectification, it can be charged to that department.
- (ii) If the defective units can be traced to a specific job/order, the additional costs can be charged to that job/order.
- (iii) If the defectives are abnormal and due to uncontrollable factors, the additional costs are charged to Costing Profit and Loss Account.

In many concerns, inefficient and bad workmanship results in defective units. To minimise defective work, suitable financial and non-financial incentives based on the quantity or percentage reduction in defective work should be provided.

#### **Illustration 13**

2,000 kgs. of Art Board valued at ₹8,000 were issued for the manufacture of medium sized cartons. The following details were collected:

- (a) 2,400 Nos. medium sized cartons weighing 0.50 kg. each were manufactured.
- (b) 480 kg. of offcuts were used for the manufacture of small sized carton. This would have amounted to ₹1,000.

- (c) 320 medium sized cartons were damaged and rectification costs came up to ₹160.  
 (d) 120 kg. of offcuts were sold as scrap for ₹20.

You are required to calculate the cost of one medium sized carton assuming that there are no opening or closing stocks.

**Solution:**

	<i>Quantity (Kgs.)</i>	<i>Value (₹)</i>
Input	2,000	8,000
Less: offcuts transferred to small size cartons	<u>480</u>	<u>1,000</u>
	1,520	7,000
Less: value of scrap sold	<u>120</u>	<u>20</u>
	1,400	6,980
Add: cost of rectification	<u>160</u>	<u>160</u>
	1,400	7,140
Less: waste in process	<u>40</u>	<u>40</u>
Cost of 2,720 medium sized cartons	<u>1,360</u>	<u>7,140</u>

$$\text{Cost per carton} = \frac{7,140}{2,720} = ₹2.62$$

**Notes:**

- (1) Calculation of waste in process : Each carton weighs 0.5 kg. Total medium sized cartons produced are 2,720. This means that quantity should be  $2,720 \times 1/2 = 1,360$  Kgs. The balance quantity is presumed to be normal waste in process.  
 (2) The waste in one process may be used in another. The credit given to the process where loss occurs depends upon the utility value of this material for the process in which it is used, i.e., the value if it is directly purchased from the market.

**Illustration 14**

A company draws up the standard cost of a product as follows:

	₹	₹	₹
Direct Materials		12	
Direct Wages:			
Dept. A 3 hours	15		
Dept. B 2 hours	12		
Dept. C 5 hours	<u>20</u>	47	
Factory Overhead:			
Dept. A	18		
Dept. B	18		
Dept. C	<u>40</u>	<u>76</u>	
Factory Cost			135

Administration Cost	12
Selling Cost	15
Distribution cost	<u>18</u>
Total	180
Net Profit	<u>20</u>
Selling Price	<u>200</u>

Factory overhead is absorbed by means of departmental hour rates. Analysis of these overheads reveal that in each department a rate of ₹2 per hour is required to absorb the variable portion, the balance being of a fixed nature. As a general rule, all production is of first class quality.

After a batch of 1,000 units has been processed through all three departments, inspection reveals that half are faulty. The faulty products can be rectified by completely re-processing through departments B and C. Alternatively, they can be sold for ₹20 each.

Present figures which indicate to management the most economic method of dealing with the faulty products.

**Solution:**

Time taken for original processing and rectification:

Dept. A	$3 \times 1,000$	= 3,000 hrs.
B	$2 \times 1,000 + 2 \times 500$	= 3,000 hrs.
C	$5 \times 1,000 + 5 \times 500$	= 7,500 hrs.
Fixed Cost		
Dept. A	$\text{₹}18 - (\text{₹}2 \times 3 \text{ hrs})$	= ₹12 per unit
B	$\text{₹}18 - (\text{₹}2 \times 2 \text{ hrs})$	= ₹14 per unit
C	$\text{₹}40 - (\text{₹}2 \times 5 \text{ hrs})$	= ₹30 per unit

*Alternative 1*

Cost of production (includes reprocessing cost)		₹
Direct material 1,000 x ₹12		12,000
Wages and factory overhead:		
Dept. A	$3,000 \times \text{₹} (5+2) + 1,000 \times \text{₹}12$	33,000
B	$3,000 \times \text{₹} (6+2) + 1,500 \times \text{₹}14$	45,000
C	$7,500 \times \text{₹} (4+2) + 1,500 \times \text{₹}30$	<u>90,000</u>
		1,80,000
Administrative, selling and distribution overhead for 1,000 units	45,000	
Loss on non-recovery of 500 units re-processed	<u>22,500</u>	<u>67,500</u>
Total Cost		2,47,500
Sales 1,000 @ ₹200 each		<u>2,00,000</u>
Loss		<u>47,500</u>

*Alternative 2*

Cost of production of 1,000 units of which 500 units are disposed off:

Sales	500 x 200 + 500 x 120	= ₹1,60,000
Cost	1,000 x 180	= <u>₹1,80,000</u>
Loss		<u>₹ 20,000</u>

The second alternative is better as the loss involved is less.

**19. CONTROL OF MATERIAL LOSSES**

While designing a control system, controllable and uncontrollable losses should be distinguished. The system should determine standard levels which can be attained. Losses may be uncontrollable in the short-term but controllable over a period of time. Moreover, it takes time to control a new process. The various levels should be frequently reviewed. Losses can be minimised by proper storage, proper handling, maintenance of suitable inventory levels etc.

A control system should calculate and report production and data regarding waste, scrap, spoilage and defectives should be regularly collected. Periodic reports help to evaluate performance and also in taking corrective action. Standards should be set. Variances of actuals from standards should be examined so that it can be effectively controlled.

The control of losses can be exercised at three levels:

- (i) Occurrence
- (ii) Recovery, handling and storage
- (iii) Disposal.

*Control Over Occurrence*

Losses are incurred due to nature of the product, quality control, method of production etc. The causes may be summarized as follows:

- (a) *Labour-related causes:* Lack of training errors committed by machine operator, inadequate supervision, damage caused by handling carelessness, fatigue etc.
- (b) *Causes related to manufacturing method:* Defective equipments, pitfall in design, machine jams, trials and adjustments, overloading and excessive utilisation of resources, problems associated with new products, standards set etc.
- (c) *Materials related causes:* Defective materials, obsolescence, evaporation, deterioration.
- (d) *Others:* Strict inspection, thefts, etc.

*Control Over Recovery Handling and Storage*

As soon as stores are received they should be handled and stored properly. Different types of losses should be identified at different stages of production. Items

to be rectified should be identified. Good handling and proper storage protect goods from damage, theft and misappropriation.

#### *Control over Disposal*

To maximise the sales value of waste, scrap, spoilage etc. the following points are to be considered :

- (i) make the goods ready for sale
- (ii) select the best buyer
- (iii) control the quantities of losses.

Bids may be obtained and prices obtained should be comparable with market prices.

Physical control should be exercised over the quantities of scrap, spoilage leaving the factory and the quantities produced, repaired and sold must be continuously reviewed.

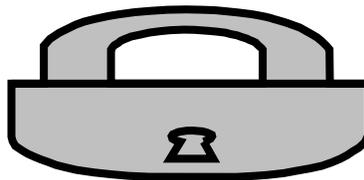
#### LESSON ROUND UP



- The materials are of two types, namely:
  - (i) direct materials, and (ii) indirect materials.
- The methods of purchasing can be classified as centralised and localised purchasing, centralised purchasing means that all purchases are made by a single purchase department while in localized purchasing each department or branch makes its own purchases.
- The routine followed for the purchase of materials may involve: indenting for materials, issuing of tenders and receiving quotations, placing of order, inspecting stores received, receiving the stores, and checking and passing bills for payment.
- Storekeeping is the function of receiving materials, storing them and issuing these to workshops or departments.
- Inventory control is the systematic control and regulation of purchase, storage and usage of materials in such a way as to maintain an even flow of production and at the same time avoiding excessive investment in inventories.
- The common techniques of inventory control are: (i) Min-max plan, (ii) Two-bin system, (iii) Order cycling system, (iv) ABC analysis, (v) Fixation of various levels, (vi) Use of perpetual inventory system and continuous verification, (vii) Use of control ratios and (viii) Review of slow and non-moving items.
- ABC analysis is a value based system of material control, in which materials are analysed according to their value so that costly and more valuable materials are given greater attention and care.
- Economic Ordering Quantity (EOQ) is that size of the order which gives maximum economy in purchasing any material and ultimately contributes towards maintaining the material at the optimum level and at minimum cost.

- Perpetual inventory system is a method of recording stores balances after each receipt and issue to facilitate regular checking and obviate closing down for stock taking.
- Materials are issued to production department on cost price, average price or notional price methods.
- Losses of materials may be either normal loss or abnormal loss.
- Materials losses may arise in the form of waste, scrap, spoilage or defectives.

### SELF TEST QUESTIONS



1. Define inventory control. Why is inventory control necessary?
2. Distinguish between direct material and indirect material.
3. What are the requisites of a good inventory control system?
4. What are the different methods of controlling inventory ?
5. Discuss the advantages and disadvantages of centralised purchasing of raw materials.
6. Explain what is „minimum level’, „maximum level’, „ordering level’, quantity. How are they determined?
7. Explain ABC analysis. What are its merits ?
8. What is perpetual inventory system ?
9. Outline a system of stores control .
10. Define and explain the following terms and the treatment given in Cost Accounts:
  - (a) Waste
  - (b) Scrap
  - (c) Spoilage
  - (d) Defectives.
11. Discuss the different methods of pricing issues.
12. From the following records regarding material calculate (i) the re-order level, (ii) the maximum stock level, and (iii) the minimum stock level.
 

Re-order quantity	6,000 units
Minimum stock (for emergencies)	5 weeks
Average delivery time	4 weeks
Maximum stock level	20 weeks
Average consumption per week	400 units
Minimum consumption in 4 weeks	1,200 units

13. Two components X and Y are used as follows:

Normal usage	50 units each per week
Minimum usage	25 units each per week
Maximum usage	75 units each per week
Re-order quantity	X: 400 units; Y: 600 units
Re-order period	X: 4 to 6 weeks; Y: 2 to 4 weeks.

Calculate for each components: (1) the re-order level, (2) the minimum level, (3) the maximum level, and (4) the average stock level.

14. From the following transactions, prepare separately the Stores Ledger Accounts, using the following pricing methods: (i) the FIFO, (ii) the LIFO.

January	1	Opening balance 100 units @ ₹5 each
January	5	Received 500 units @ ₹6 each
January	20	Issued 300 units
February	5	Issued 200 units
February	6	Received 600 units @ ₹5 each
March	10	Issued 300 units
March	12	Issued 250 units

15. The following receipts and issues of materials were made during the month of January.

January	1	Opening stock 80 units @ ₹1.00 each
January	7	Received from vendors 40 units @ ₹1.10 each
January	12	Received from vendors 60 units @ ₹1.20 each
January	22	Received from vendors 72 units @ ₹1.25 each
January	4	Issued 60 units
January	9	Issued 40 units
January	14	Issued 40 units
January	30	Issued 80 units

Prepare the Stores Ledgers maintained under (i) the FIFO, (ii) the LIFO methods.

16. The following transactions took place in respect of a material item during the month of March:

<i>Date</i>	<i>Receipt Qty.</i>	<i>Rate</i>	<i>Issue Qty.</i>
March 2	200	2.00	
March 10	300	2.40	
March 15			250
March 18	250	2.60	
March 20			200

Prepare the Stores Ledger Sheet, pricing the issue at the simple average rate and the weighted average rate.

17. Stocks are issued at the standard price and debit balance of variance amount before transfer to Costing Profit and Loss Account was ₹500. The following

purchases and issues were made during the month of April:

April 1	Opening Balance	100 units @ ₹90.00 per unit
April 5	Purchased	500 units @ ₹85.00 per unit
April 6	Issued	60 units
April 12	Issued	375 units
April 23	Issued	65 units
April 30	Purchased	250 units @ ₹80.00

Find out the standard price for the issue and prepare the Stores Ledger Account. Also calculate the material price variance.

18. After inviting tenders two quotations are received as follows:
- ₹1.20 per unit.
  - ₹1.10 per unit plus ₹3,000 fixed charges to be added irrespective of units ordered.

Advise with your arguments on whom orders should be placed and what quantity is to be ordered.

The following additional information may be of interest:

	Units
Present Stock	35,000
Average Monthly Requirement	10,000
Maximum Level	80,000
Minimum Level	30,000

(Sales tax to be ignored in both cases).

19. The following discrepancies have been reported by the company's internal auditor. Suggest the action to be taken by the management:
- Large deficiencies in important items of stores.
  - Accumulation of stocks in the departments due to excess requisitioning.
  - Items purchased but not issued, resulting in increased stock value.
20. Different methods are used for the verification of physical stores depending upon the nature of the item involved. Detail the method you would adopt for verification of the following stock:
- 200 tons of coal.
  - 40,000 gallons of oil in tanks.
  - 15,000 yards of belting in rolls.
  - 2,000 nos. of bolts in bags.
  - 500 kilos of leather rings part of which is dry and the balance is soaked in oil.
21. During the year, your company has purchased and received 1,500 tons of bulky raw materials which is stored in the factory yard. Issues have been recorded amounting to 1,200 tons. Physical stock-taking at the accounting year end reveals only 200 tons in stock. How would you deal in your cost records with the deficit of 100 tons in physical stocks? What procedure would you instal to ensure that deficit will not occur in the future?

22. A consignment consisted of two chemicals A and B. The invoice gave the following data:

Chemical A - 4,000 kgs. @ ₹2.50 per/kg.	10,000
Chemical B - 3,200 kgs. @ ₹3.25 per/kg.	10,400
Sales Tax	816
Railway Freight	<u>384</u>
Total cost	<u>21,600</u>

A shortage of 200 kgs. in A and 128 kgs. in B was noticed due to breakage. What is the stock rate you would adopt for pricing issues assuming a provision of 5% towards further deterioration? (A: ₹2.94 per kg.; B: ₹3.76 per kg.)

23. The following is an extract of the record of receipt and issues of sulphur in a chemical factory during February:

- 1 Opening balance 500 tons @ ₹200
- 3 Issued 70 tons
- 4 Issued 100 tons
- 8 Issued 80 tons
- 13 Received from supplier 200 tons @ ₹190
- 14 Returned from Deptt. 15 tons
- 16 Issued 180 tons
- 20 Received from supplier 240 tons @ ₹190
- 24 Issued 300 tons
- 25 Received from supplier 320 tons @ ₹190
- 26 Issued 115 tons
- 27 Returned from Deptt. 35 tons
- 28 Received from supplier 100 tons @ ₹190

Issues are to be priced on the principle of 'First-in First-out'. The stock verifiers of the factory had found a shortage of 10 tons on the 22nd and left a note accordingly. Draw up a priced stores ledger card for the material showing the above transactions. (Stock on 28th Feb., 555 tons; ₹1,05,450)

24. X Ltd. has purchased and issued the materials in the following order:

		Unit	Unit Cost
1st January	Purchased	300	₹ 3
4th January	Purchased	600	4
6th January	Issued	500	
10th January	Purchased	700	4
15th January	Issued	800	
20th January	Purchased	300	5
23rd January	Issued	100	

Ascertain the quantity of closing stock as on 31st January and state what

would be its value (in each case) if issues were made under the following methods:

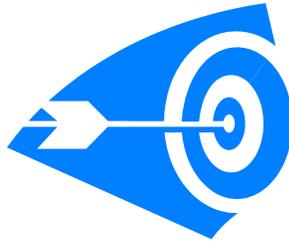
- (i) Average cost.
- (ii) First-in First-out.
- (iii) Last-in First-out.

*(Weighted average = ₹2,218/-; FIFO ₹2,300/-; LIFO ₹1,900/-).*

25. A plastic factory buys and uses a component for production at ₹10 per unit. Annual requirement is 20,000 units. The carrying cost of inventory is 10% per annum and ordering cost is ₹40 per order. The purchase manager argues that as the ordering cost is very high, it is advantageous to place a single order for the entire annual requirement. He also says that if we order 20,000 units at a time, we can get a 3% discount from the supplier. You are required to evaluate this proposal and make your recommendations.
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STUDY X  
**LABOUR COST**

**LEARNING OBJECTIVES**



- Understand the significance of labor cost
- Differentiate between direct labour cost and indirect labour cost
- Describe the different methods of remuneration.
- Appreciate the features of incentive schemes.
- Classify the incentive schemes.
- Understand the various aspect of labour turnover, idle time and overtime.
- Familiarise the preparation of payrolls.

**1. COST OF LABOUR**

Labour is perhaps the most important factor in any institution, specially in an industrial concern. It is only labour or human beings who convert raw materials into finished goods or services. But, more important, labour is the only factor which can give almost unlimited productivity - its output can be increased whereas the output from other factors is limited by their physical limitations. In many cases workers have achieved wonders in regard to the amount and quality of work done by them. It is a mistake to think that with mechanisation or automation, the importance of labour has decreased. On the contrary, mechanisation has meant greater importance of labour, though the number of workers needed may be smaller. If 20 men are employed to do manual work and if 2 or 3 of them do not put in the required amount of work, the cost of the idleness involved will be low compared to a case where a big costly machine is installed requiring two or three workers and these two or three workers idle away their time, not making the machine produce as much as it can. Thus, in no case can it be said that labour is unimportant.

However, labour is complex and delicate and, therefore, it requires very careful handling. Proper remuneration is of the utmost importance but the following are important:

- (i) Proper selection so that a job is handled by persons who are adequately but not over qualified for the work and who have an interest in that sort of work;
- (ii) Proper training;

- (iii) Proper conditions of work so that there is proper cleanliness, ventilation, temperature, etc.;
- (iv) Proper treatment of the men so that their dignity as human beings is not hurt;
- (v) A good system of incentives, both positive and negative so that the workers believe that good work is rewarded and bad or poor work will entail punishment. For this purpose proper standards of work have to be set and maintained.

The main objective in this regard should be to see that the labour cost per unit should be as low as possible. It is a mistake to concentrate on wage rates - high wage rates may mean lower labour cost per unit of output and therefor, may be more economical than low wage rates if they mean high labour cost per unit. The aim should be to raise productivity.

In a narrow sense, the term "labour cost" encompasses only wages paid to the workers but it represents the various payments made to a worker arising out of his employment in the organization. These cover the following:

I. Monetary or pecuniary benefits (immediate):

- (i) Basic wages;
- (ii) Dearness allowance;
- (iii) Production bonus.

II. Deferred Monetary Benefits:

- (i) Employer's contribution to P.F.;
- (ii) Employer's contribution to E.S.I.;
- (iii) Retirement gratuity;
- (iv) Contribution towards old age pension;
- (v) Profit bonus.

III. Fringe benefits or non-pecuniary gains:

- (i) Free or subsidised food;
- (ii) Free or subsidised housing;
- (iii) Free or subsidised education to children;
- (iv) Medical and hospital facilities;
- (v) Expenses are also incurred on canteen, creches, sports club, etc.

Expenses listed under III may be termed as "welfare expenses". Mostly these are treated as manufacturing overheads. Wages paid to workers should be such as to attract and retain the work force and minimise labour turnover.

The total labour cost can be classified as follows:

- (a) Direct labour costs;
- (b) Indirect labour costs.

### 1.1 Direct Labour Cost

It refers to all labour expended in altering the construction, composition, conformation or condition of the product. The wages paid to skilled and unskilled

workers for his labour can be allocated specifically to the particular product or the process as the case may be. In any manufacturing process or department, the workers employed may be of the following two categories:

- (i) Those who are directly engaged on the production or in the carrying out of an operation or process;
- (ii) Those who are assisting in the process by way of supervision, maintenance, transportation of materials, etc.

The workers coming under the first category constitute direct labour and the wages paid to them are called direct wages. In a factory, where production of a number of products is undertaken or in a jobbing concern, workers are given job cards on which they note the time devoted to each job or product. These job cards are then analysed job wise so that the wages attributable to each job can be computed.

Direct labour cost is that portion of wages or salaries which can be identified with and charged to a single costing unit.

It can be easily identified with and charged to a single costing unit as there is a direct relationship with the product/process. Direct labour cost can be easily calculated and is quite significant in amount.

The distinction between direct and indirect labour is a matter of convenience and expediency. Too much effort should not be spent on treating some labour as direct. For example, supervisory labour can be so analysed as to make it direct but the effort to do so will be proportionately too big. It is convenient to treat supervisory wages as indirect.

## **1.2 Indirect Labour Costs**

It refers to labour expended that does not alter the construction, conformation, composition or condition of the product, but which contributes generally to such work and to the completion of the product and its progressive movement and handling up to the point of dispatch. In other words, labour employed for the purpose of carrying out tasks incidental to goods produced or services provided is regarded as indirect labour. Wages or salaries paid to foremen, supervisors, inspectors, clerks, store-keepers, managers, accountants, salesmen, directors, etc., are examples of indirect labour cost.

These costs are not easily identifiable with particular units of cost. Indirect labour cost can be classified as that expended in production departments and that in service departments. (bulk of the labour cost in a production department will be direct). The classification should enable control over such costs and codification of indirect labour accounts.

It should be noted that labour that may be indirect for the main product may be direct for a particular purpose or activity. For example, workers in the power house are indirect for the purpose of ascertaining the cost of the main product but they are direct as far as the power house is concerned.

*Need for distinguishing between direct and indirect labour cost:* The distinction has to be made:

- (a) for calculating accurate labour cost and thus provide a basis for strict control;

- (b) for facilitating calculation of labour efficiency;
- (c) for proper allocation of overheads;
- (d) for introduction of incentive schemes;
- (e) for inter-unit comparison; and
- (f) for estimating total labour costs.

## **2. TIME RECORDING**

Recording of time has two purposes - time-keeping and time-booking. It is necessary for both type of workers: direct and indirect. It is necessary even if the workers are paid on piece basis.

Time-keeping is necessary for the purpose of recording attendance and for calculating wages. Time-booking means a record from the utilisation point of view; the purpose is cost analysis and cost apportionment. Record keeping is correct when time-keeping and time-booking tally.

### **2.1 Time-keeping**

The purpose of time-keeping is to provide basic data for:

- (i) pay-roll preparation;
- (ii) finding out the labour cost of a job/product/service;
- (iii) attendance records to meet statutory requirements;
- (iv) determining productivity and controlling labour cost;
- (v) calculating overhead cost of a job, product or service;
- (vi) to maintain discipline in attendance;
- (vii) to distinguish between normal and over-time, late attendance and early leaving; and
- (viii) to provide internal check against dummy workers.

The time-keeping office records the attendance of workers. Depending on the number of workers, a separate department may be established or it may form part of the personnel department.

Wages paid on the piece rate basis also require that attendance be recorded for the following reasons:

- (a) Records of attendance is necessary for statistical purposes.
- (b) If overhead rates are based on labour rates, time recording is necessary.
- (c) Output will decrease if attendance is unchecked. There may be more idle time and production schedules may not be followed.
- (d) Some workers may not be punctual. This will affect the morale of the workers.
- (e) It is necessary to ensure that production hours have been properly utilised.
- (f) It provides data for calculating bonus and overtime.
- (g) Labour costs can be allocated on this basis.
- (h) For calculating dearness allowance, it is necessary.

- (i) For ascertaining payment under certain schemes of benefits, e.g., P.F., Pension, etc.
- (j) For calculating leave with pay, etc.

## 2.2 Time-Booking

The objectives of time-booking are:

- (i) to apportion overheads against jobs;
- (ii) to calculate the labour cost of jobs done;
- (ii) to ascertain idle time for the purpose of control;
- (iv) to find out that the time during which a worker is in the factory is properly utilised;
- (v) to evaluate labour performance, to compare actual and budgeted time;
- (vi) to determine overhead rates of absorbing overhead expenses under the labour hour and machine hour methods;
- (vii) to calculate wages and bonus provided the system of payment depends on the time taken.

## 3. LABOUR REMUNERATION

Remuneration has been defined as the reward for labour. The employer may agree to pay a specific amount to the employee for performing certain work. This payment may be based on time spent or output produced. In addition, other allowances like dearness allowance, city compensatory allowance, house rent allowance, bonus, etc. may be paid.

The following are the requisite of a good wage payment plan:

- (a) The wage system should be simple and easy to understand.
- (b) There should be no ambiguity or uncertainty about it.
- (c) It should be flexible, i.e., adaptable to changes.
- (d) There should be uniformity. The wage rate in an industry should be comparable with the wages prevailing in the region of locality.
- (e) It should guarantee a minimum living wage.
- (f) It should give a satisfactory standard of living to the workers.
- (g) The wage rates should take into account the skill, effort and responsibility of the worker.
- (h) The requirements and conditions of work should be taken into account.
  - (i) It should satisfy both the employees and employer and create good relations.
  - (j) It should minimize labour turnover.
  - (k) It should encourage and motivate the workers.
  - (l) Administration and operation cost should be minimised.
- (m) It should reduce absenteeism.
- (n) The workers should be able to maximise output. At the same time quality should not be sacrificed.

High wages does not always result in high labour cost. High wages attracts efficient labour force. This increases output, thus lowering labour cost per unit and

overhead cost per unit. If the methods of remuneration are satisfactory, the employer-employee relations are good.

#### **4. BASIC METHODS OF REMUNERATION**

##### **4.1 Time Rate System**

The time rate or day rate is related to the hours of wage and is commonly used. The wage rate can be fixed on hourly, daily, weekly, fortnightly or monthly basis depending on the nature of his skill.

This method can be applied in the following circumstances:

- (a) The quality of work is more important;
- (b) The output of a worker cannot be measured;
- (c) Where output of a worker is not in his control;
- (d) Where the work can be closely supervised;
- (e) Where increase in output is negligible compared to the incentive.

##### *Advantages*

The advantages of time rate system are:

- (a) It is simple and easy to understand;
- (b) It is recognised by trade unions as all workers are paid alike;
- (c) It involves less clerical expenditure;
- (d) A steady income is assured;
- (e) As there is no hurry, tools and materials are handled carefully. Wastage is minimised.

##### *Disadvantages*

- (a) It does not encourage initiative;
- (b) Labour cost may rise thereby decreasing profit. This may be caused by decrease in productivity;
- (c) Standards for labour are difficult to set;
- (d) Production may decrease thus upsetting production schedules, creating production bottlenecks and increasing cost per unit;
- (e) Labour cost cannot be estimated for the purpose of quotations;
- (f) It creates more idle time;
- (g) This system encourages inefficiency;
- (h) It requires close supervision to ensure that employees are working.

A few variations of this system are in use. They are:

(a) *High Wage Plan*: Compared to the wage rate prevailing in the region, a higher time rate is fixed. This is done to attract efficient workers so that output is high. To enable the workers to achieve the standard, suitable working conditions are created.

Unsuitable or inefficient workers are taken off the scheme.

The employer benefits because overheads and wage costs per unit are reduced.

This scheme is suitable when high quality and productivity are required. But it should be possible to set up standards and measure the output.

The advantages are:

- (a) reduces supervision;
- (b) simple and inexpensive (because of lower labour cost per unit);
- (c) attracts skilled workers;
- (d) increases productivity;
- (e) decreases wages and overhead cost per unit.

(b) *Different Time Rates*: For different levels of efficiency, different rates are fixed. For efficiency upto the standard level, normal wages are paid and for efficiency beyond the standard level, the rate is gradually increased. This is similar to differential piece rate system.

(c) *Measured Day Work (Graduated)*: The hourly rates are divided into two parts. One part is the fixed part which depends on the nature of the job and the other part is variable depending on the merit rating and cost of living.

This system is very complicated. The calculations involved increase when the workers change jobs frequently. Merit rating may be arbitrary. There is multiplicity of rates. The workers do not easily understand the system. Because of all these factors this system is not popular.

#### **4.2 Payment by Results**

Payment by results is a method of paying wages which depends on the output or units produced by the worker. The worker can increase his income by producing more units. The main classifications of payment by results are:

- (i) payment is directly proportionate to the worker's production; for example, straight piece work system;
- (ii) payment proportionately increases as the production increases, like the differential piece-work system;
- (iii) the rate of payment decreases as output increases e.g. premium bonus methods;
- (iv) the payment varies at different levels of production like the accelerated premium method.

##### *Piece Rate System*

The wages are paid on the basis of the output of workers, i.e., on the basis of quantity of output. It is simple and common method of wage payment. The worker is paid on the basis of his work, not taking into account the time involved.

The wage is calculated as follows:

Wage = Number of units produced x Rate per unit.

The piece rate can be applied in the following cases:

- (a) the work is of standard or repetitive nature;
- (b) piece rate can be easily fixed;
- (c) there is uninterrupted flow of work;
- (d) it is necessary for the employer to get maximum production; and
- (e) quantity of output depends on effort and does not require skill.

The piece rate can be fixed by determining the time required to complete a piece. This can be done from past experience or estimation or time and motion study. In case the job is new, a few trial runs can enable fixation of piece rates. After this, the time is correlated to the wage rate to determine the piece rate.

#### *Merits*

- (a) A worker becomes an expert by continuously doing the work. Thus he can earn more.
- (b) It increases efficiency.
- (c) It reduces costs.
- (d) Idle time is automatically controlled.
- (e) The reward is related to effort. Efficiency is recognized.
- (f) Quotations can be easily made as cost per unit is known.
- (g) Supervision can be reduced as workers are paid according to performance.
- (h) Workers endeavor to increase production by discovering new techniques of producing goods.

#### *Demerits*

- (a) Quality may be sacrificed to increase production.
- (b) Wastage may be high if not properly supervised.
- (c) It necessitates more supervision and inspection so that units attain the standard quality.
- (d) In order to maximize output, the workers may use machines and tools recklessly.
- (e) If work stops due to machine break down, power failure etc., the workers may feel insecure.
- (f) The workers' health may be affected due to over-strain.
- (g) The inefficient and less efficient people may feel frustrated.
- (h) Lack of ready market may cause over production and surplus.
- (i) Determination of piece rate is difficult.

#### *Piece Rate with Guaranteed Time Rate*

A certain level of output is determined. Workers are paid on the basis of output. If the output is less than the standard, the worker is paid on time rate basis.

Thus, this system incorporates the merits of the time rate and piece rate system and eliminates the demerits of them.

But it is very complicated and misunderstandings may arise.

## 5. INCENTIVE SCHEMES

Both time rate and piece rate systems have their merits and demerits. Incentive system attempts to combine the good aspects of both systems. The main objective of incentive plan is to induce a worker to produce more to earn a higher wage. Producing more in the same period of time should result in higher pay for the worker. Because if greater number of units produced, it should also result in a lower cost per unit for fixed factory cost and also for labour cost. A good incentive plan should have the following characteristics:

- (1) It should be simple and easy to understand;
- (2) Operating cost of the system should be low;
- (3) It should permit less supervision;
- (4) The time lag between effort and reward should be minimum;
- (5) It should be fair to the employees and employer;
- (6) The standard set should be attainable;
- (7) Performance above standard should be well rewarded;
- (8) It should be flexible;
- (9) The premium should be large enough to induce workers to work hard;
- (10) All workers should be given equal opportunity to earn;
- (11) It should facilitate the budgetary control and standard cost systems;
- (12) Inspection should be good;
- (13) Good working conditions must be available;
- (14) The system should be introduced on a permanent basis and should not be ambiguous;
- (15) No rate cutting should be permitted and an individual's earnings should not be curtailed;
- (16) There should be uniformity of reward for same amount of effort;
- (17) Indirect workers should also be included.

### *Advantages of Incentive Schemes*

- (1) Less supervision is required;
- (2) The employee morale is high because they can earn more;
- (3) There is increased productivity;
- (4) Increased production reduces cost;
- (5) Labour cost can be estimated;
- (6) It is possible to set standards for labour with accuracy;
- (7) There is maximum utilization of resources;
- (8) A task is done in the most economical manner which reduces labour cost.

### *Disadvantages of Incentive Schemes*

- (1) If rates are not uniform for same type of jobs, it causes discontent.
- (2) Quality may deteriorate and may be sacrificed in order to increase quantity.
- (3) It involves more calculations.

- (4) The workers may not adhere to the safety precautions in order to increase production. Hence accidents may occur.
- (5) The workers' health may be affected due to over-strain.
- (6) There may be apprehensions regarding rate cutting.
- (7) Inefficient workers may envy the efficient ones which may cause unrest.
- (8) Unskilled workers sometimes earn more than skilled workers if the latter have to work on time basis.

## 6. CLASSIFICATION OF INCENTIVE SCHEMES

Incentive schemes can be classified as follows:

- (a) Differential piece rate
- (b) Premium bonus schemes
- (c) Group bonus plans
- (d) Bonus schemes for indirect workers.

### 6.1 Differential Piece Rate

Efficient and inefficient workers are distinguished. More than one piece rate is determined. Standards are set for each operation or job. Efficient workers, i.e., those who attain or better the standard set are given a higher rate and inefficient ones are given a lower rate. Hence, there is encouragement to improve the performance. As the level of output increases the piece rate also increases. This ratio may be proportionate or proportionately less or more than the increase in output. Hence output is maximised.

This system is suitable where:

- (a) the methods of working are standardised;
- (b) the workers do the same job over a long period;
- (c) the nature of work is repetitive;
- (d) output of each person can be measured;
- (e) the standard time for each job can be determined with precision.

The advantage of this scheme is that workers are encouraged to increase their efficiency and earn higher wages. But the system is complicated and difficult to understand. It is expensive to operate. A stage may be reached when the increased labour cost will equalise the benefit arising due to reduced overhead.

#### *Taylor's Differential Piece Rate System*

F.W. Taylor (known as the father of scientific management) originated this scheme. No minimum wage is guaranteed. The standard output is determined on the basis of time and motion studies. Wages are calculated on the basis of two widely different piece rates. Those attaining or crossing the standard get a higher piece rate and those not attaining it get a lower rate.

The lower rate is based on 83% of the day wage rate. This rate is applicable to

those who don't attain the standard. The higher rate is based on 125% of the day rate and an incentive of 50% of the day rate.

The efficiency of a worker can be determined either by comparing standard time and actual time taken or by comparing actual output and standard output.

Hence, this system penalises the slow worker and rewards the efficient one. This principle is based on the fact that slow production increases the cost of production.

$$\begin{aligned} \text{If the wage rate is} &= ₹0.50 \text{ per unit} \\ \text{The low piece rate will be} &= 0.50 \times 83\% = ₹0.415 \text{ per unit} \\ \text{The high piece rate will be} &= 125\% \times ₹0.50 + 50\% \times ₹0.50 \\ &= ₹0.875 \text{ per unit.} \end{aligned}$$

#### *Merrick's Differential Rate Scheme (Multiple Piece Rate System)*

This is a modification of the Taylor's scheme. This system smoothens the sharp differences in Taylor's scheme by determining 3 gradual rates. It does not guarantee time rate but each one is paid according to his efficiency.

<i>Efficiency level</i>	<i>Piece rate</i>
Upto 83%	Normal rate
83% to 100%	110% of normal rate
Above 100%	120% of normal rate.

The performance below standard is not penalised.

#### *Gantt's Task and Bonus Plan*

Under N.L. Gantt's scheme, time wages are guaranteed to every worker. Standards are set. Bonus is generally 20% at 100% efficiency. If a worker takes the standard time to perform the task (100% efficiency), he is given wages for standard time and bonus of 20% on wages earned. If the worker completes the task in less than standard time he is given wages for the standard time (for actual output) and a bonus of 20% of the wages for the standard time. A high piece rate may also be offered for performance above 100% efficiency.

#### *Baum's Differential Scheme (Milwaukee Scheme)*

It is a combination of Halsey and Taylor's differential piece rate system. This system provides incentives at different levels of efficiency.

### **6.2 Premium Bonus Plans**

All the gains of efficient workers and all the losses of inefficient workers benefit the employer under the time rate system. Under the piece rate system, it is the workers who gain or lose.

Under the premium bonus system, the gains are shared by the employer and employees in agreed proportions. Apart from the minimum guaranteed wages, the efficient workers get bonus which depends on the time saved. The standard is determined scientifically. The various incentive schemes should be chosen keeping in mind the nature of the work, with the consent of trade unions in order to make it successful.

These plans regulate the speed of work so that the pace of work is not slow and at the same time it is not fast. Basically, there are two types of plans. Under the constant sharing plans, the proportion of sharing is constant at all levels of efficiency, but under variable sharing plans, it varies with the time saved.

#### *Emerson's Efficiency (or Empiric) System*

Though minimum daily wages is guaranteed, efficiency is also rewarded. Standard is set based on the time and motion study.

Bonus is payable when efficiency reaches 66-2/3% and increases as the output increases.

<i>Levels of Efficiency</i>	<i>Piece Rate</i>
66-2/3%	Guaranteed time rate
90%	Time rate + 10% as bonus
100%	Time rate + 20% as bonus
above 100%	Time rate + 20% as bonus + additional bonus of 1% for every increase of 1% beyond 100% efficiency

The bonus is usually calculated on the efficiency achieved for all the jobs in a wage period taken together.

$$\text{Efficiency \%} = \frac{\text{Standard time for all jobs done in a period}}{\text{Time taken for doing all jobs in a period}} \times 100$$

Slow work is avoided and work is done at a uniform rate.

But under this scheme, the incentive for efficiency beyond the standard is not appreciable.

#### *Halsey plan*

Under this plan originated by T.A. Halsey, time rate is guaranteed. Standard time and work are predetermined. The bonus is 50% of the standard time saved.

$$\text{Total wages} = \text{Time taken} \times \text{Hourly rate} + 1/2 (\text{Time saved}) \times \text{Hourly rate.}$$

#### *Halsey Weir plan*

The bonus under this plan is 33-1/3% of the standard time saved.

$$\text{Total wages} = \text{Time taken} \times \text{Hourly rate} + 33-1/3\% (\text{Time saved}) \times \text{Hourly rate}$$

#### *Rowan Plan*

The time rate is guaranteed under the plan originated by J. Rowan. The percentage of bonus to the wages earned is that which the time saved bears to the standard time.

$$\text{Total wages} = \text{Time taken} \times \text{Hourly rate} + \left( \frac{\text{Time saved}}{\text{Standard time}} \right) \times \text{Time taken} \\ \times \text{Hourly rate}$$

*Comparison of Halsey and Rowan Plan*

If the worker finishes the work in half the time fixed for it, the result under Rowan and Halsey plan will be same. If the time saved is less than 50% of the standard time, the Rowan plan is better. If time saved is greater than 50% of the standard time, the Halsey plan is better.

*Bedauxe Point System*

Under the scheme originated by C.E. Bedaux, time wages is guaranteed. Earnings increase after the worker attains 100% efficiency level. Standard time and standard work is measured in terms of Bedaux points, which are also known as B's. B' means a standard work performed in a standard minute. In other words, one B' unit represents the amount of work which an average worker can do under normal conditions in one minute allowing for the relaxation needed. Workers get a bonus which is equal to 75% of B's saved.

$$\text{Bonus} = \text{B's saved} \times \frac{\text{Hourly rate}}{60} \times \frac{75}{100}$$

Thus, if a person gets 90 B's and hourly rate is ₹1.20, then his bonus will be:

$$\text{B's saved} = 90 - 60 = 30 \text{ B's}$$

$$\text{Bonus} = 30 \times \frac{1.20}{60} \times \frac{75}{100} = 45 \text{ paise}$$

If bonus is given to the extent of the value of the entire time saved, then the scheme will be called the 100% Bedaux Scheme. But if nothing is mentioned, it is assured that it is 75% Bedaux Scheme.

Under 75% Bedaux Scheme, the labour cost increases till 100% efficiency and then starts declining. Under the 100% Bedaux Scheme, the labour cost remains constant after the 100% level is reached.

*Hayne's Scheme*

Time wages are guaranteed. The standard time is set in terms of standard man minutes called 'manits'. A manit means a standard work performed in a standard minute. Bonus is given for the time saved. The value of the time saved is shared by the worker and foreman in the ratio of 5 : 1 if the work is standardised and repetitive in nature. Otherwise, the ratio of sharing between worker, employer and supervisor will be 5 : 4 : 1.

The labour cost falls until 100% efficiency is reached. Thereafter, it falls at a decreasing rate if work is non-standardised or remains constant if the work is standardised.

*Barth's Scheme*

This scheme does not guarantee wages. Under this scheme,

$$\text{Total wages} = \text{Hourly rate} \sqrt{\text{Standard time} \times \text{Time taken}}$$

Total wages is higher for less efficient people. As the efficiency increases, the earnings decrease. Hence, this plan is suitable for beginners and trainees. Since it is complicated, workers cannot understand it. Moreover, it does not encourage efficient workers.

#### *Diemer Scheme*

It is a combination of Halsey's and Gantt's schemes. A straight line increasing incentive is given beyond 100% efficiency.

#### *Accelerated Premium Systems*

Increments of bonus increase at a faster rate as production increases. This scheme provides a strong incentive to increase efficiency at all levels. Though labour cost per unit decreases, it may rise at a very high level of output.

The formula for calculating wages differ from one concern to another. To understand the scheme, graph of  $y=0.6x^2$  may be used, where  $y$  = wages and  $x$  = efficiency.

If x is	1	1.5	2	2.5	3
y will be	0.6	1.35	2.4	3.75	5.4

Calculation can be expressed in percentages also.

This scheme is complicated. It is difficult for workers to understand it. This scheme should not be used where quality of output is important.

It is most suitable for foremen and supervisors. This scheme will encourage them to get higher production from their workers.

### **6.3 Group Bonus Plans**

There are certain jobs which have to be performed collectively by a group of workers. The ultimate production depends on the efficiency of the whole group. Under group bonus plans, payment is made by results to all the workers in the group. Bonus may be shared equally or in different proportion according to the levels of skill required. These proportions may be based on time rates or some previously agreed ratios.

These plans may increase production and reduce costs per unit. It creates team spirit. But efficient and inefficient workers are rewarded alike. Efforts and rewards are not properly linked.

These plans can be used where:

- (a) it is required to reward both direct and indirect workers;
- (b) output depends on team work;
- (c) it is desirable to create team spirit; and
- (d) it is not possible to measure the output of an individual person.

The incentive can be made attractive by:

- (a) creating small groups;

- (b) forming a group where degree of skill required does not vary widely; and
- (c) making the group independent of any other group, machines, etc.

*Advantages of group bonus plans*

- (a) There is more co-operation and team work;
- (b) Inspection and supervision can be reduced as every worker is concerned about output;
- (c) There is self-discipline;
- (d) Production increases;
- (e) Cost of production decreases and also the spoiled and defective goods;
- (f) It simplifies payroll and cost accounting.

*Disadvantages of group bonus plans*

- (a) The amount of bonus given is too insignificant.
- (b) No distinction is made between efficient and inefficient workers.
- (c) Time gap between effort and reward is very wide.

The following are some of the group bonus plans:

*(a) Priestman Production Bonus Plan*

For each department, the standard output and standard time are calculated. Bonus is payable to the department in which actual output is greater than standard output. The bonus is given on the basis of the percentage by which actual output exceeds the standard output.

*(b) Cost Premium System*

Payment is made on an agreed basis, for any costs saved, for the factory as a whole. Bonus is dependent on output and also the economy effected in the use of materials and services. But this system is not very common and there is no direct relation between the incentive and the efforts of the workers.

*(c) Rucker's Plan (Share of Production Plan)*

The ratio of earning and added value is calculated. Added value is the change in the market value because of change in form, availability or location of the product. Any reduction in this ratio increases the wages.

*(d) Scanlon Plan*

This is similar to Rucker's plan but the meaning of added value is different. Bonus depends on the ratio between earnings and production achieved at selling price.

*(e) Towne Gain Sharing Plan*

Bonus depends on the reduction in labour cost as compared to the standard set. In addition to wages earned, half of any saving in cost is paid to workers and supervisors.

#### 6.4 Bonus Scheme for Indirect Workers

Production cannot be increased by giving incentives to direct workers only. It is necessary to have the cooperation of indirect workers to attain maximum efficiency. Indirect workers are equally important and should be given incentives.

It is difficult to introduce an incentive scheme for indirect workers because standards cannot be set easily, efficiency is difficult to measure and actual output cannot be determined in relation to set standards.

In spite of the difficulties, the purposes of establishing an incentive scheme are the following:

- (a) to reduce costs by increasing departmental efficiency;
- (b) to avoid discrimination among different types of workers. It is illogical to reward the efficiency of direct workers and not to reward the efficiency of indirect workers;
- (c) to create team spirit;
- (d) to avoid labour unrest and dissatisfaction among indirect workers;
- (e) to reward good work;
- (f) to increase the efficiency of providing services to direct workers;
- (g) to reduce waste, scrap idle time;
- (h) in certain cases, work of direct workers depends on the services provided by the indirect workers. Inefficiency of indirect workers due to lack of incentives will affect the efficiency of the direct workers.

The following points should be kept in mind while introducing an incentive scheme:

- (a) It should be able to achieve all round efficiency.
- (b) It should relate rewards to efforts.
- (c) The bonus should be payable at some regular intervals.
- (d) It should be introduced for a certain period.

Indirect workers can be grouped for facilitating the introduction of a suitable incentive scheme. Indirect workers can be associated with direct workers, e.g., supervisor, material handling workers, internal transport workers, etc. Bonus in this case, can be linked to the output of direct workers as they help to increase the production. The bonus can be a percentage of the average bonus earned by direct workers.

Indirect workers provide some general services, e.g., canteen staff, cleaners, etc. Their bonus can be based on the output of a department, output of the entire organisation, merit rating, job evaluation, percentage of bonus for direct workers or high time-rates.

Sometimes, bonus of indirect workers can be related to the total production of the department of cost centre. In case of higher levels of production, higher rate of bonus are applicable. This system is better as the bonus of one person is not dependent on the efforts of another but on the total production.

## 7. INDIRECT MONETARY INCENTIVE SCHEMES

### 7.1 Profit Sharing

Henry R. Seagar has defined profit sharing ~~as~~ as an agreement freely entered into, by which employee receives a share, fixed in advance, of the profits.”

The workers get a share in the profit of the undertaking in a certain agreed percentage which is in addition to the normal wages of the workers. The profit percentage is predetermined and may be given in cash or in the form of shares. The percentage is often governed by the Payment of Bonus Act. If profit is given in the form of shares, it is called co-partnership.

#### *Advantages*

The advantages of profit sharing are:

- (a) Relations between labour and management improve because labour take interest in management.
- (b) This method assumes that every worker contributes towards profit. It is applicable to all workers irrespective of their efficiency. There is better employer-employee relationship.
- (c) Labour morale is boosted. Hence, there is industrial peace.
- (d) The employees get a share of profit, capital and control of the management. This creates a sense of belonging to the company and the workers contribute to the welfare of the company. Materials and plant will be handled with care, thus minimising loss and wastage.
- (e) As bonus is given annually there will be low labour turnover.
- (f) There is a direct relationship between profits and bonus. The workers try to increase bonus by increasing efficiency and production.
- (g) There is greater co-operation and better team spirit.
- (h) Because of this scheme, quality workers are attracted to the industry.

#### *Disadvantages*

- (a) The workers may not be satisfied as there is uncertainty of profits inspite of the efforts taken.
- (b) Labour unions also oppose the scheme as it may alienate the workers from unions.
- (c) Profits depend on many factors. Many are beyond the control of the workers and are not directly related to their efforts.
- (d) Apportionment of profit on a suitable basis is difficult.
- (e) Once the workers are used to bonus, non-payment of bonus in a year may give rise to discontent. Fluctuations in bonus also create bad industrial relations.
- (f) The workers may not trust the figures presented by the employer and resort to strikes.

- (g) The efficiency of worker may not increase as they have to wait for the year end to get reward for their efforts.
- (h) The efficiency may be adversely affected as both efficient and inefficient workers are treated alike.
- (i) The employers object to this scheme as the workers share the profits but not the losses.

## 7.2 Co-partnership

Sometimes labour is given a share of the profit in the form of shares. This form of profit-sharing is called labour co-partnership. It gives the labour a permanent interest in the future of their organisation. Hence, this scheme is also known as co-ownership.

Though the employees get part of the capital and profits accruing thereon, these shares may or may not carry the voting rights. The employees may freely deal with these shares or a few restrictions may be placed on them. Sometimes, employers may be given a loan to buy the company's shares.

### *Advantages*

- (a) Because the employees have a share in the capital, they have a greater sense of belonging and hence they evince more interest in the concern.
- (b) It reduces labour turnover.
- (c) As the employees contribution to the profit of the concern is recognised, their morale is high.

### *Disadvantages*

- (a) Efforts and rewards are not properly related.
- (b) The importance of incentive is reduced as date of payment is too far.
- (c) It does not differentiate between efficient and inefficient workers.
- (d) Misunderstanding between employee and employer may arise because employees cannot verify the shares allotted to them.

## 8. OTHER NON-MONETARY INCENTIVE SCHEMES

These are also known as psychological incentives. This benefit is given to all employees in the organisation. These are provided free or employees may partially contribute towards them. These benefits are not given for any specific job done rather these are conditions and terms of employment. Examples of non-monetary incentives are:

- (a) Health and safety benefits.
- (b) Favorable working conditions.
- (c) Cheap grains.
- (d) Housing facility.
- (e) Subsidised canteen.
- (f) Sports and recreational facilities.
- (g) Welfare measures.
- (h) Medical facilities for the individual and family.

- (i) Education (free or subsidised) to employees and their dependents.
- (j) Leave travel facilities
- (k) Pension, contribution to P.F., gratuity.
- (l) Subsidized excursions and tours.
- (m) Free tea, milk, snacks etc.
- (n) Free uniforms, protective clothing etc.

Because some of the incentives are obligatory under law or given as matter of convention, they cannot be called incentives even though the employer incurs extra expenses to provide them.

The merits of the scheme are:

- (a) A good reputation is created for the undertaking and hence best labour is attracted.
- (b) It reduces labour turnover.
- (c) It reduces absenteeism.
- (d) It encourages employees' loyalty to the concern.
- (e) It makes the employment attractive.
- (f) It helps to build a happy, contented and satisfied staff.

#### Illustration 1

Three workers — X, Y and Z - work in a factory. The following particulars apply to them:

Normal rate per hour	₹4.00
Piece rate	₹3.00 per unit

Standard 2 units per hour

In a 40 hour week, the production of the workers is as follows:

X	50 units
Y	80 units
Z	120 units

Calculate the earnings of the workers under (a) Taylor differential piece rate system, (b) Merrick differential piece rate system, and (c) Gantt's task bonus system. Also show cost per unit under these methods.

#### Notes:

- (a) The two rates under Taylor's system have been found as follows:
 

Low piece rate = 83% of ₹3.00	= ₹2.50 (approx.)
High piece rate = 175% of ₹3.00	= ₹5.25
- (b) Below standard time, wages are guaranteed under Gantt's task bonus system. At standard, 20% bonus is allowed in time wages and above standard, wages are allowed for standard time for actual output with a bonus of 20% of time wages has been allowed.

**Solution:**

Workers	Output (Units)	Efficiency (%)	Taylor System		Merrick System		Gantt System	
			Earnings ₹	Cost per Unit ₹	Earnings ₹	Cost per Unit ₹	Earnings ₹	Cost per Unit ₹
X	50	62.5	125	2.50	150	3.00	160	3.20
Y	80	100	420	5.25	264	3.30	192	2.40
Z	120	150	630	5.25	432	3.60	288	2.40

**Illustration 2**

In a factory Bedaux Point Premium System is in operation. The following are the particulars with regard to a job in a factory:

Allowed time for the job 600 minutes (or B's)

Time taken 480 minutes (or B's)

Rate ₹12.00 per hour

Calculate bonus and earnings.

**Solution:**

Earnings (When 75% scheme is adopted)

$$\begin{aligned}
 &= T \times R + \frac{75}{100} \left( \frac{P \times R}{60} \right) \\
 &= 8 \times 12.00 + \frac{75}{100} \left( \frac{600 - 480}{60} \right) \times 12.00 \\
 &= ₹96.00 + ₹18.00 \\
 &= ₹114.00
 \end{aligned}$$

Earnings (When 100% scheme is adopted)

$$\begin{aligned}
 &= T \times R + \frac{75}{100} \left( \frac{P \times R}{60} \right) \\
 &= 8 \times 12.00 + \frac{120}{60} \times 12.00 \\
 &= ₹96.00 + ₹24.00 = ₹120 \\
 &(T = 480 \text{ mts} \div 60 = 8 \text{ hours})
 \end{aligned}$$

**Illustration 3**

The following particulars apply to a particular work situation:

Standard time allowed 6 hours

Rate per hour Re. 10.00

Actual time taken by

Worker P - 8 hours

Worker Q - 6 hours

Worker R - 4 hours

Calculate the wages of the workers under Barth Premium System. Also calculate labour cost per hour.

**Solution:**

Remuneration under Barth Premium System will be calculated as follows:

$$E = \sqrt{\text{Actual time} \times \text{Standard time}} \times R$$

Worker P's remuneration:

$$\sqrt{8 \times 6} \times 10.00 = \text{Rs. } 69.30$$

Worker Q's remuneration:

$$\sqrt{6 \times 6} \times 10.00 = \text{Rs. } 60.00$$

Worker R's remuneration:

$$\sqrt{4 \times 6} \times 10.00 = \text{Rs. } 49.00$$

Labour cost per hour

Total wages paid	= ₹178.30
No. of hours worked	= 18 hrs.
Labour cost per hour	= ₹178.30 ÷ 18 = ₹9.90.

**Illustration 4**

From the following information, calculate the bonus and earnings under Emerson Efficiency Bonus Plan:

Standard output in 12 hours	... 48
Actual output in 12 hours	... 42
Time rate	₹7.50 per hour

If the actual output is 60 units, what will be amount of bonus and earnings?

**Solution:**

Under Emerson Efficiency Bonus Plan earnings will be calculated as follows:

$$E = T \times R + P (T \times R)$$

P (bonus percentage) will vary as follows:

	<i>Efficiency</i>	<i>Bonus</i>
(i)	Below 66-2/3% efficiency	Time wages. No bonus.
(ii)	66-2/3% to 100% efficiency	A bonus increasing from 0.01% to 20% above basic wages on 100% efficiency.
(iii)	Over 100%	A bonus of 20% above basic wages plus 1% for each 1% increase in efficiency.

Efficiency in terms of output

$$\frac{\text{Actual output}}{\text{Standard output}} \times 100$$

$$= \frac{42}{48} \times 100 = 87.5\%$$

Bonus percentage at 87% efficiency is 7.56 and at 88% efficiency is 8.32, given in Emerson Bonus Percentage Table. Thus at 87.5% efficiency we can take bonus percentage as 7.94 (average of 7.56 and 8.32%). Bonus will, therefore, be

$$\frac{7.94}{100} \times 12 \times 7.5 = ₹7.15$$

$$\begin{aligned} \text{Earnings} &= 12 \times 7.5 + \left( \frac{7.94}{100} \times 12 \times 7.5 \right) \\ &= 90.00 + 7.15 = ₹97.15 \end{aligned}$$

(b) If the actual output in 12 hours is 60 units, efficiency will be:

$$\frac{60}{48} \times 100 = 125\%$$

$$\begin{aligned} \text{Bonus percentage} &= 20\% + (125 - 100) \times 1\% \\ &= 20 + 25 = 45\% \end{aligned}$$

$$\text{Bonus} = \frac{45}{100} \times 12 \times 7.5 = ₹40.50$$

$$\begin{aligned} \text{Earnings} &= 12 \times 7.5 + \left( \frac{45}{100} \times 12 \times 7.5 \right) \\ &= 90.00 + 40.50 = ₹130.5 \end{aligned}$$

### Illustration 5

The existing incentive system of a certain factory is:

Normal working week	5 days of 9 hours plus 3 late shifts of 3 hours each
Rate of payment	Day work = ₹10.00 per hour Late shift = ₹15.00 per hour
Additional bonus payable	₹25.00 per day shift ₹15.00 per late shift

Average output per operative for 54 hours week i.e., including 3 late shifts 120 articles

In order to increase output and eliminate overtime it was decided to switch on to a system of payment by results. The following information is obtained:

Time rate (as usual) ₹10.00 per hour

Basic time allowed for 15 articles	5 hours
Piece-work rate	Add: 20% to piece
Premium	Add: 50% to time

You are required to show:

- (i) hours worked;
- (ii) weekly earnings;
- (iii) number of articles produced; and
- (iv) labour cost per article for one operative under the following systems:
  - (a) Existing time rate.
  - (b) Straight piece-work.
  - (c) Rowan system.
  - (d) Halsey-Weir.

Assume that 135 articles are produced in a 45-hour week under (b), (c) and (d) and that the worker earns half the time saved under the Halsey-Weir System. The additional bonus under the existing system will be discontinued in the proposed incentive scheme.

**Solution:**

*(a) Existing Time Rate*

Weekly wages:	45 hrs. @ ₹10.00 per hour	₹ 450.00
	9 hrs. @ ₹15.00	135.00
	Day shift bonus 5 x 25.00	125.00
	Late shift bonus 3 x 15.00	<u>45.00</u>
		<u>755.00</u>

*(b) Piece Rate System*

Basic time: 5 hours for 15 articles	₹
∴ Cost of 15 articles	50.00
Add: 20%	<u>10.00</u>
	<u>60.00</u>

Rate per article ₹60.00 ÷ 15 = ₹4.00

Articles produced in a week = 45 x 15/5 = 135

Hence, earnings = 135 x ₹4.00 = ₹540.00

*(c) Rowan Premium System*

Basic time	= 5 hrs. for 15 articles
Adding 50%	= 7.5 hrs. for 15 articles
∴ Time for producing one article	= 7.5 ÷ 15 = 30 mts.
∴ Time allowed for 135 articles	= 67.5 hrs.
Actual time taken for 135 articles	= 45 hrs.

$$\begin{aligned} \therefore E &= RT + \left( \frac{S-T}{S} \right) \times T \times R \\ &= 45 \times 10 + \left( \frac{67.5 - 45}{67.5} \right) \times 45 \times 10 \\ &= 450 + 150 = \text{₹}600 \end{aligned}$$

(d) *Halsey-Weir Premium System*

$$\begin{aligned} E &= RT + 50\% (S - T) \times R \\ &= 45 \times 10 + 50\% (67.5 - 45) \times 10 \\ &= 450 + 112.5 = \text{₹}562.5 \end{aligned}$$

The other requirements of the question have been shown in the following table:

	Methods			
	(a)	(b)	(c)	(d)
(i) Hours worked	54	45	45	45
(ii) Weekly earnings (₹)	755	540	600	562.5
(iii) Articles produced	120	135	135	135
(iv) Labour cost per article (₹)	6.29	4.00	4.44	4.17

### Illustration 6

In a factory guaranteed wages at the rate of ₹18.00 per hour are paid in a 48-hour week. By time and motion study it is estimated that to manufacture one unit of a particular product 20 minutes are taken. The time allowed is increased by 25%. During one week Abraham produced 180 units of the product. Calculate his wages under each of the following methods: (a) Time rate, (b) Piece-rate with a guaranteed weekly wage, (c) Halsey premium bonus and (d) Rowan premium bonus.

#### Solution:

(a) *Time Rate:*

$$\begin{aligned} E &= T \times R \\ &= 48 \times 18.00 = \text{₹}864.00 \end{aligned}$$

(b) *Piece Rate:*

$$E = N \times R, \text{ where } N \text{ means number of units produced}$$

and  $R$  means rate per unit.

$$= 180 \times 7.5 = \text{₹}1,350$$

Rate per unit will be found as follows:

Time taken	20 minutes
Incentive allowance 25%	5 minutes
Standard time to manufacture one unit	25 minutes

$$\text{Rate per minute} = \frac{\text{Rs. } 18.00}{60} = ₹0.3$$

$$\text{Rate per unit} = ₹0.3 \times 25 = ₹7.5$$

(c) *Halsey Premium Bonus Plan:*

$$\begin{aligned} E &= T \times R + \frac{1}{2} (S - T) \times R \\ &= 48 \times 18.00 + \frac{1}{2} (75 - 48) \times 18.00 \\ &= 864.00 + 243 = ₹1,107.00 \end{aligned}$$

Standard time:

One unit takes 25 minutes

180 units should take  $180 \times 25 = 4,500$  minutes

$$\text{or } \frac{4,500}{60} = 75 \text{ hours}$$

(d) *Rowan Premium Bonus Plan:*

$$\begin{aligned} E &= T \times R + \frac{S - T}{S} \times T \times R \\ &= 48 \times ₹18.00 + \frac{27}{75} \times 48 \times ₹18.00 \\ &= ₹864.00 + ₹311.00 = ₹1175.00 \end{aligned}$$

### Illustration 7

A worker under the Halsey Plan of remuneration has a day rate of ₹1,200 per week of 48 hours, plus a cost of living bonus of ₹10 per hour worked. He is given an 8-hour task to perform, which he accomplishes in 6 hours. He is allowed 30% of the time saved as premium bonus. What would be his total hourly rate of earnings, and what difference would it make if he were paid under the Rowan Plan?

#### Solution:

Standard Time	: 8 hours
Time taken	: 6 hours

Standard Wages :

Day rate	= ₹1200 for 48 hours = ₹25 per hour
Cost of living bonus	= ₹10 per hour
Premium bonus	= 30% of time saved

Under Halsey Method :

Wages for 6 hours @ ₹25 per hour	₹150
Cost of living bonus for 6 hours @ ₹10 per hour	₹60
Bonus : (Time saved x Rate x 30%) = $2 \times ₹25 \times 30\%$	₹15
Earnings for 6 hours	₹225
Hourly rate = $₹225/6 = ₹37.5$	

Under Rowan Method:

Wages for 6 hours @ ₹25 per hour	₹150.00
Cost of living bonus for 6 hours @ ₹10 per hour	₹ 60.00
Bonus : (Time saved/Standard Time ) x Time taken Hourly Rate	
= (2 /8) x 6 x 25 = ₹37.50	
Earnings for 6 hours	₹247.50
Hourly rate = ₹247.5/6 = ₹41.25	

Under Rowan plan the worker would get ₹3.75 more per hour.

### Illustration 8:

Calculate total monthly remuneration of three workers X, Y and Z from the following data:

- Standard production per month per worker - 1,000 units.  
Actual production during the month  
X - 850 units, Y - 750 units and Z - 950 units.
- Piece work rate Re. 1.00 per unit (actual production).
- Additional production bonus is ₹50 for each percentage of actual production exceeding 80% over standard (e.g., 79% nil, 80% nil, 81% - ₹50, 82% - ₹100 and so on).
- Dearness pay fixed ₹200 per month.

### Solution:

Standard production	1,000 units
X's actual production	850 units
X's production efficiency	$\frac{850}{1,000} \times 100 = 85\%$
Y's actual production	750 units
Y's production efficiency	$\frac{750}{1,000} \times 100 = 75\%$
Z's actual production	950 units
Z's production efficiency	$\frac{950}{1,000} \times 100 = 95\%$

X will be entitled to a bonus of ₹50 x 5 = ₹250

Z will be entitled to a bonus of ₹50 x 15 = ₹750

Y will get no bonus as his production efficiency is below 80%.

The earnings of the workers will be as follows:

	X	Y	Z
	₹	₹	₹
Piece wage	(850xRe.₹1.00)	(750xRe.₹1.00)	(950x₹1.00)
	=850	=750	=950

Bonus	250	—	750
Dearness Allowance	<u>200</u>	<u>200</u>	<u>200</u>
	<u>1,300</u>	<u>950</u>	<u>1,900</u>

**Illustration 9**

A manufacturer introduces new machinery into his factory with the result that production per worker is increased. The workers are paid by results, and it is agreed that for every 2% increase in average individual output, an increase of 1% on the rate of wages will be paid. At the time the machinery is installed, the selling price of the products falls by 8-1/3%.

Show the net saving in production costs which would be required to offset the losses expected from reduced turnover and bonus paid to workers.

	1st period	2nd period
Number of workers	175	125
Number of articles produced	8,400	7,000
Wages paid	₹16,800	
Total Sales	₹37,800	

**Solution:**

$$\begin{aligned} \text{Sales value of 8,400 articles} &= 37,800 \\ \text{Sales value of 7,000 articles} &= \frac{37,800}{8,400} \times 7,000 \\ &= ₹31,500 \end{aligned}$$

$$\text{Fall in sales value} = 31,500 \times \frac{25}{3} \times \frac{1}{100} = ₹2,625$$

$$\begin{aligned} 175 \text{ workers produce} &= 8,400 \text{ units} \\ 125 \text{ workers will produce} &= \frac{8,400}{175} \times 125 \\ &= 6,000 \text{ units} \end{aligned}$$

But the actual production is 7,000 units

$$\begin{aligned} \text{Increase in labour efficiency} &= \frac{1,000}{6,000} \times 100 \\ &= 16.667\% \end{aligned}$$

$$\begin{aligned} \text{Increase in wage rate will be } 16.667\% \div 2 &= 8.33\% \\ \text{Wages for 175 workers} &= ₹16,800 \end{aligned}$$

$$\begin{aligned} \text{Wages for 125 workers} &= \frac{16,800}{175} \times 125 \\ &= ₹12,000 \end{aligned}$$

$$\begin{aligned} \text{Increase in wages} &= ₹12,000 \times \frac{25}{3} \times \frac{1}{100} \\ &= ₹1,000 \end{aligned}$$

Hence, total consists of:	₹
(a) Fall in sales values	2,625
(b) Increase in wages	<u>1,000</u>
	<u>3,625</u>

Therefore, net saving in production costs will have to be ₹3,625.

### Illustration 10

From the following comparative statements of the years 2010 and 2011:

- Find out whether the year 2011 showed an overall better performance or otherwise:
- Possible causes of difference:

	2010	2011
Wages incurred	₹2,80,000	₹5,10,000
Units produced	16,000	25,000
Average number of workers	225	400

(Assume production of only one quality and same machinery conditions in both years).

### Solution:

(Better performance implies increase in labour productivity, which can be expressed as output per man).

	2010	2011	% change
Average wage per man	₹1,244	₹1,275	(+) 2.5
Annual output per man (units)	71.2	62.5	(-) 12.09
Labour cost per unit	₹17.5	₹20.40	(+) 16.57

Output per man decreased by 12.09%, labour cost per unit increased by 16.57%, which may be due to general rise in wages which has gone up by 2.5%.

### Illustration 11

A factory undertakes production to customers' specifications. Worker A was entrusted with the production of 100 units of product 'X' in 50 hrs. and worker B was asked to produce 50 units of produce 'Y' in 100 hrs. The ruling rate of wages is ₹2.50 per hour which is guaranteed irrespective of standard of efficiency. If the work given is finished within the time allotted the workers get ₹3 per hour for time taken. Time saved is rewarded by an incentive bonus at 50% of wages earned per hour. A completes the job in 40 hrs. and B in 60 hrs.

Assuming that the prevailing overhead rate is ₹5 per labour hour, indicate the impact of the system of wages coupled with the incentive scheme on the profits of the company as compared to a straight piece rate at ₹3 per hour.

The fixation of hourly rates is understood to provide for a saving of 20% of the time fixed when the work is carried out by an efficient worker under normal conditions.

Have you any comments to make on the basis of the rate fixation in these circumstances?

**Solution:****Cost of Conversion of Products X and Y***I. Straight Piece Rate*

	Product X (100 units)	Product Y (50 units)
Time allowed	50 hrs.	100 hrs.
Wages @ ₹3 per hour	₹150	₹300
Overhead @ ₹5 per hour on 40 hours and 80 hours respectively (on the assumption that there will be a saving of 20% in the time allowed for the jobs)	₹200	₹400
	<u>₹350</u>	<u>₹700</u>

*II. Incentive Bonus System if adopted by the Company*

Wages for time taken @ ₹3 per hour	₹120	₹180
Incentive bonus @ ₹1.50 per hour of time saved	₹15	₹60
Total wages	₹135	₹240
Overhead @ ₹5 per hour of time taken	₹200	₹300
Cost of conversion	<u>₹335</u>	<u>₹540</u>
Saving	<u>₹15</u>	<u>₹160</u>

The company will save in terms of costs if Incentive Bonus System is introduced.

*(i) When there is no incentive system*

	Product X (100 units)	Product Y (50 units)
Time allowed	50 hrs.	100 hrs.
Labour @ ₹3 per hour	₹150	₹300
Overhead for time allowed @ ₹5 per hour	₹250	₹500
Labour and overhead cost at normal hours at straight piece rate	<u>₹400</u>	<u>₹800</u>

*(ii) When there is incentive system*

Time allowed	40 hrs.	60 hrs.
Wages @ ₹3 per hour	₹120	₹180
Bonus	₹15	₹60
Total Wages	₹135	₹240
Overhead @ ₹5 per labour hour taken	₹200	₹300
Total Cost	<u>₹335</u>	<u>₹540</u>

**Illustration 12**

The following particulars of Soni & Co. relate to the year ending 31st March, 2011 for 30 workers :

Basic wages	₹50,000
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Dearness allowance	25,000
Night shift allowance	9,600
Overtime allowance	7,000
PF deposit	12,000
ESI contribution	2,808
Recovery towards house rent	10,200
Recoveries against supply of goods	16,000
Expenditure for employees' amenities	4,730

PF is paid in equal share by the employer and employee. Contribution to ESI is in proportion of 7:5 by the employer and employee respectively. The workers are entitled to 5% of the total days worked as leave on full pay. The number of days worked in a year is 300. Normal idle time is 5%. Assuming that all the items are evenly spread over all the days in a year find out total wages, total cash payment to workers and per hour per labour wages. The daily working hours are 8.

**Solution:****Calculation of Total Cash Payment**

Total wages paid to 30 workers in 2010-11		₹
Wages		50,000
D.A.		25,000
Night shift allowance		9,600
Over time allowance		<u>7,000</u>
		91,600
<i>Less : Deduction :</i>		
P.F.	6,000	
ESI	1,170	
Rent Recovery	10,200	
Recovery of provisions	<u>16,000</u>	<u>33,370</u>
Total Cash Payment		<u>58,230</u>
<i>Total Wages :</i>		
Base Wages, DA, etc.		91,600
PF contribution (Employer's share)		6,000
ESI Contribution (Employer's share)		1,638
Expenditure on amenities		<u>4,730</u>
Total Wages		<u>1,03,968</u>
Cost per man-hour		
No. of hours worked during the year: 300 x 8 x 30		72,000
<i>Less : 5% leave with pay :</i>	3,600	
5% for idle hours (5% of 72,000-3,600)	<u>3,420</u>	<u>7,020</u>
		<u>64,980</u>
Cost per man-hour = 1,03,968 ÷ 64,980 = ₹1.60		

## 9. LABOUR TURNOVER

It is a common feature in any concern that some employees leave the concern and others join it. Workers change the job either for personal betterment or for better working conditions or due to compulsion. Labour turnover is the ratio of the number of persons leaving in a period to the average number employed. It is the change in the composition of the labour force in an organisation. It can be measured by relating the engagements and losses in the labour force to the total number employed at the beginning of the period. All the losses must be taken into account regardless of the cause for leaving.

### Example

If 20 employees leave an organisation in a year and the average labour force is 400, then the labour turnover is 5%.

An index or norm may be fixed depending on the usual labour turnover in the industry or the labour turnover in the past. The rate of labour turnover depends on a number of factors like the nature of the industry, its size, location, nature of labour etc. A high labour turnover must be investigated. A low labour turnover points out the lack of flexibility or it may be due to inefficient workers not willing to leave the organisation.

Labour turnover reduces the labour productivity and increases costs. Hence, it should be kept at a minimum level.

### 9.1 Causes of Labour Turnover

Causes of labour turnover may be classified as (a) personal causes (b) avoidable causes (c) unavoidable causes.

*Personal causes: Examples are*

- (i) Death
- (ii) Family problems and responsibilities
- (iii) Personal betterment
- (iv) Retirement
- (v) No liking for job, locality or environment.

*Avoidable causes: Examples are*

- (i) Poor wages
- (ii) Odd hours of work
- (iii) Lack of training
- (iv) Lack of good recruitment policy
- (v) Unsuitability of job/bad placement
- (vi) Bad working conditions
- (vii) Discriminating policies
- (viii) Dissatisfaction with job
- (ix) Lack of incentives and promotions
- (x) Lack of transport, house, medical, recreation, education facilities

- (xi) Inter trade union rivalry
- (xii) Unsympathetic attitude of supervisors and management staff.

*Unavoidable causes: Examples are*

- (i) Disablement
- (ii) Discharge on disciplinary grounds
- (iii) Marriage/pregnancy in the case of female workers
- (iv) Lack of housing/transport facilities
- (v) Discharge due to prolonged illness
- (vi) Redundancy
- (vii) Inefficiency, negligence, dereliction
- (viii) Criminal prosecution
- (ix) Insubordination
- (x) Retrenchment due to seasonal demand, other unavoidable causes
- (xi) Sabotage, pilferage, theft, dishonesty.

Another classification is under different heads viz., financial causes, social causes and psychological causes.

### 9.2 Effects of Labour Turnover

It increases cost of production due to the following reasons:

- (i) Cost of selecting/replacing workers
- (ii) Cost of training imparted to new workers
- (iii) Production planning cannot be properly executed and this results in production loss
- (iv) Loss due to defectives and wastage
- (v) Loss due to mishandling of tools, equipments, breakages, etc.

### 9.3 Measurement of Labour Turnover

Method	Labour turnover
<i>Separation Rate Method</i>	$\frac{\text{Separation during a given period}}{\text{Average number of workers during the period}}$ <p>(The average of workers is calculated by taking a simple average of workers at the beginning and end of the period.)</p>
<i>Net Labour Turnover Rate Method or Replacement Method</i>	$\frac{\text{Number of replacements during a given period}}{\text{Average working force during the period}} \times 100$
<i>Labour Flux Rate Method</i>	$\frac{\left( \text{Number of separation during a period} \right) + \left( \text{Number of new employees during a given period} \right)}{\left( \text{Average number of workforceduring the given period} \right)} \times 100$

*Costs of Labour Turnover:* The cost of labour turnover can be either preventive costs or replacement costs. Preventive costs are incurred to keep the workers satisfied and discourage them from leaving the concern. Replacement costs are incurred for recruiting and training labour and the loss arising due to wastages, reduced productivity of new labour force.

*Preventive costs: Examples are*

- (i) costs of providing medical services;
- (ii) personnel administration cost;
- (iii) cost of labour welfare activities;
- (iv) costs incurred for providing pension, provident fund and retirement schemes.

*Replacement costs: Examples are*

- (i) Decline in output due to inexperience of new workers.
- (ii) Decline in quality due to the lack of experience of new workmen.
- (iii) Loss of output during the time lost while recruiting new workers.
- (iv) Cost of recruitment/selection.
- (v) Cost of training.
- (vi) Cost of tool, equipment and machine breakages.
- (vii) Waste, scrap and defectives arising due to lack of experience of new workers.
- (viii) Cost of accidents, compensation paid, damage to property, assets etc.

#### **9.4 Control/Reduction of Labour Turnover**

The various methods of controlling labour turnover are:

- (i) A sound wage system.
- (ii) A proper recruitment, placement and training policy.
- (iii) A sound promotion and transfer policy.
- (iv) Efficient, impartial and sympathetic personnel management.
- (v) Proper social security schemes like pension, provident fund, etc.
- (vi) Improving working conditions.
- (vii) Job rotation.
- (viii) Providing amenities and welfare schemes.
- (ix) Increasing the recreational facilities.
- (x) Introduction and maintenance of labour participation scheme.

#### **9.5 Treatment of Labour Turnover**

The various methods of treating labour turnover are:

- (a) Preventive costs are treated as overhead expenses and apportioned to departments on the basis of number of persons employed in each department.
- (b) Replacement costs may arise either due to faults of departments or due to faulty management policy. In the first case the cost is charged as overhead to the concerned department. In the latter case, the overhead cost is apportioned to different departments, on the basis of number of persons employed in each department.

**Illustration 13**

The cost accountant of Akash Ltd. has computed labour turnover rates for the quarter ended 31st March, 2011 as 20%, 10% and 6% respectively under flux method, replacement method and separation method. If the number of workers replaced during that quarter is 80, find out the number of (i) workers left and discharged; and (ii) workers recruited and joined including replacements.

**Solution:****Working Note:**

Average number of workers on roll:

$$\frac{\text{Labour Turnover rate}}{\text{(Under replacement method)}} = \frac{\text{No. of replacements}}{\text{Average No. of workers on roll}}$$

$$\text{OR } \frac{10}{100} = \frac{80}{\text{Average number of workers on roll}}$$

$$\text{OR Average No. of workers on roll} = \frac{80 \times 100}{10} = 800$$

(i) *Workers left and discharged:*

$$\frac{\text{Labour turnover rate}}{\text{(Separation method)}} = \frac{\text{No. of separations (S)}}{\text{Average No. of workers on roll}} \times 100$$

$$\text{OR } \frac{6}{100} = \frac{S}{800} \quad \text{or} \quad S = 48$$

Hence the number of workers left and discharged = 48

(ii) *No of workers recruited and joined:*

$$\frac{\text{Labour turnover rate}}{\text{(Flux method)}} = \frac{\text{No. of separations (S) + No. of Accessions (A)}}{\text{Average No. of workers on roll}}$$

$$\frac{20}{100} = \frac{48 + A}{800} \quad \text{or} \quad A = \frac{16,000}{100} - 48 = 112$$

No. of workers recruited and joined (including replacement) = 112

**10. IDLE TIME**

When workers are paid on time basis there is usually a difference between the time for which the workers are paid and the time actually spent by them in production. The loss of time for which the employer pays but obtains no direct benefit is termed as idle time.

In other words, Idle time cost represents the wages paid for the time lost, i.e., time during which the worker was idle.

**10.1 Causes of idle time**

The causes of idle time can be classified into the following groups:

- (i) According to controllability
- (ii) According to functions.

- (i) According to the controllability classification, the causes are:
- (a) Normal idle time such as time lost between gate and place of work, time interval between one job and another, rest pauses, tea break, tool setting time, time taken to adjust machines etc.
  - (b) Abnormal idle time due to break downs, scarcity, non-availability of raw materials, negligence of supervision, strikes or lockouts.

The idle time may be due to avoidable causes i.e., the causes can be controlled and due to unavoidable causes, i.e., the causes beyond control.

Normal idle time occur due to unavoidable causes and abnormal idle time occur due to avoidable causes.

Another type of idle time is concealed idle time. It may arise by manipulation the job booking, wastage of time due to under-employment or doing unnecessary work etc.

This tendency to conceal idle time should be discouraged as this increases the cost of direct labour and idle time cost cannot be accurately compared between two periods.

The classification according to functions, the functional causes of idle time are analysed as the treatment depends on the causes affecting idle time. The causes can be classified as follows:

- (a) Productive causes;
  - (b) Administrative causes; and
  - (c) Economic causes.
- (a) The productive causes can be listed as follows:
- (i) machine breakdown;
  - (ii) unutilised manpower;
  - (iii) waiting for work;
  - (iv) power cuts;
  - (v) waiting for tools/raw materials;
  - (vi) waiting for instructions.

Time lost due to the causes mentioned above can be controlled internally. Proper planning helps control.

All engineering organisations should prepare a report showing lost and setting time. The departments in which time was lost can be identified and effective remedial measures taken. It is charged as an item of departmental overhead.

- (b) Idle time arising due to administrative causes are:
- (i) poor planning,
  - (ii) delayed/unproper instructions,
  - (iii) unutilised capacity due to management decisions.

Idle time arising due to these uncontrollable causes can not be controlled. It is recovered as a part of general works overhead.

(c) Idle time arising due to economic causes are:

- (i) lack of demand resulting in unutilised capacity,
- (ii) lock outs and strikes,
- (iii) non-dismissal of workers in the off-season in the case of seasonal industries.

Such idle time is not a part of cost of production. It is directly transferred to Costing Profit and Loss Account.

### **10.2 Accounting Treatment of Idle Time**

Idle time cost arising due to normal and unavoidable causes should be charged as overheads and those due to abnormal causes should be charged to Costing Profit and Loss Account.

Normal idle time such as loss in tool setting etc. can be charged at inflated rate. Jobs are charged at inflated rate.

### **10.3 Control of Idle Time**

Idle time arising due to normal and controllable causes can be controlled by proper planning but those arising due to abnormal causes cannot be controlled. Idle time is bound to occur due to setting up of tools for various jobs, time interval between two jobs, time to travel from factory gate to work place.

Idle time can be eliminated/minimised by taking the following steps:

- (i) Production should be properly planned in advance;
- (ii) Purchasing/requisitioning of materials in time;
- (iii) Proper maintenance of machines;
- (iv) Utilising man power effectively.

Responsibility for controlling idle time should be properly defined and fixed. The different causes should be properly analysed by a detailed break up under each head.

Person/department responsible for the idle time should be identified and remedial steps should be taken.

## **11. OVERTIME**

Overtime refers to the situation when a worker works beyond his normal working hours. The overtime rate is always higher than the normal rate and is usually double the normal rate. The Factories Act and Shops and Establishments Act have fixed the normal working hours, defined what constitutes overtime, the rate of overtime and maximum hours of overtime.

Overtime consists of two elements viz. the normal cost and the extra payment or premium. The premium is known as overtime cost. The normal cost is allocated to the Production Order or cost centre/unit on which the worker is working. The treatment of overtime cost varies according to the circumstances.

### 11.1 Causes of Overtime

Overtime arises due to the following circumstances:

- (a) for working due to seasonal rush;
- (b) for making up time lost due to unavoidable reasons;
- (c) for completing a job or order within a specified period as requested by the customer;
- (d) for working due to policy decisions, i.e. when there is general pressure of work and labour shortage etc.

### 11.2 Disadvantages of overtime

- (a) Output is not proportionate to the extra time taken. Hence, there is decrease in productivity.
- (b) It increases labour cost.
- (c) If overtime is done during night, it increases lighting cost.
- (d) Go slow tactics may be adopted during normal working hours to necessitate overtime.
- (e) Workers may treat overtime wages as a part of normal wages and resist discontinuance of overtime.
- (f) There is more depreciation of plant and machinery.
- (g) If the work is distributed unevenly, the workers may feel discontented.
- (h) It affects the health of workers.
- (i) Overtime over a long period leads to fatigue and increase in defective products.

Overtime is helpful in clearing backlog of work and in emergencies or when it is necessitated by uncontrollable causes. Existing resources are fully utilised.

### 11.3 Treatment of Overtime Cost

The premium or overtime cost can be charged as follows:

- (a) The job or order, if the overtime is worked at the customer's request.
- (b) As a general overhead item if it has been paid because of general pressure of work.
- (c) To the department responsible for the delay.
- (d) To the Costing Profit and Loss Account if overtime was due to unavoidable reasons, e.g., earthquake, fire, breakdown of plant, etc.
- (e) To general overhead or treated as deferred expenses if caused due to seasonal rush.

### 11.4 Control of Overtime

- (a) Overtime should be strictly controlled and discouraged. It should be permitted only in emergencies.
- (b) Overtime should be sanctioned by a competent authority.
- (c) Rules stipulated in the Factories Act should be complied with.

- (d) Authorisation slips should be issued. A copy of it should be sent to the Payroll Department for calculating overtime wages and another copy should be sent to the Cost Department so that they can be analysed for controlling these costs in future.
- (e) If overtime is being sanctioned for a long time, recruitment of more men and extra shift working should be considered.
- (f) If there is lack of machinery or resources, more machines, resources may be employed or the jobs may be subcontracted.
- (g) Overtime cost should be recorded and the department in which overtime is being done should be indicated. This helps planning of production and controlling overtime costs in future.

## **12. MISCELLANEOUS TOPICS**

### **12.1 Holiday Pay**

Employees are entitled to certain holidays. Certain compulsory holidays are declared by the Government while others are decided by agreement between the management and the workers.

Though these costs are unproductive, they are treated as part of production costs. The two methods of charging these overheads are:

- (a) They can be treated as overheads and charged to the output for the year.
- (b) The direct labour cost can be inflated to cover this cost.

### **12.2 Night Shift Allowance**

Workers are sometimes asked to work at night to clear the heavy work load. Additional payment is made for night shifts and this extra cost is charged to general works overhead. When night shift is worked at the specific request of the customers, such extra cost is charged to that job and the selling price is suitably inflated.

### **12.3 Fringe Benefits**

According to Hoge – a fringe is a labour cost which is in addition to the regular wage, salary for the time worked. A fringe may accrue from company policy, a bilateral agreement or legal requirements. It may take the form of monetary payments, services, privileges, benefits or awards. It represents pay for hours not worked or extra pay for hours worked. It is a labour cost for which no tangible return may be apparent to the employer but which in turn provides the employee with extra pay, added security or more desirable working conditions.” Examples are insurance facilities, pension facilities, medical benefits, etc.

The treatment can be as follows:

- (i) Recover fringe benefits as direct charge by using inflated or supplementary labour cost rate.
- (ii) If it can be identified with departments, treat it as departmental overhead.
- (iii) If identification is not possible, treat it as general overhead.

#### **12.4 Leave with Pay**

Leave with pay benefit is given to workers, e.g., casual leave, earned leave or privilege leave, sick leave, etc. These can be availed when necessary. They can also be accumulated for some years or encashed. It is treated in the same way as holiday pay.

#### **12.5 Learner's Wages**

Learner's wages can be treated as direct labour if it can be identified with the jobs/product. Most of the firms prefer to treat them as overheads as learners take more time than a trained worker and the jobs will be unnecessarily loaded if treated as direct labour.

#### **12.6 Training Cost**

Training schemes are available in almost all manufacturing organisations. This cost includes salaries of teaching staff, trainees, cost of tools, materials, etc., The total cost of the training section can be apportioned to various production departments on the basis of trainees in each department.

The training section can be credited with any productive work done by the trainees and the corresponding amount is debited to the concerned production order.

#### **12.7 Casual Workers**

A casual worker is one who is not a regular employee of the concern. This situation arises when there is an emergency or somebody is on leave. The quality of work done may not be upto the requisite standard due to lack of training. Hence, a person engaged once should be engaged again if he works satisfactorily. Work done by them should be duly certified.

Time sheets can also be maintained and their work properly checked. This cost is treated as an overhead cost.

The steps to be followed while appointing casual workers are:

- (a) Records of appointments and discharge should be maintained.
- (b) Such workers should be appointed only after the relevant executive has approved it.
- (c) The Time Keeping Department and Wages Department should be sent a copy of the appointment letters to record attendance and facilitate wage payment.
- (d) The time to do jobs should be matched with attendance time.
- (e) The time keeping department and wages department should be intimated in case of dismissal or termination of service of the casual workers.

#### **12.8 Out Workers**

Sometimes workers perform their duties outside the company's premises on behalf of the organisation. Hence, the work done and payment made has to be controlled.

Workers may work at their homes either with their tools or with the tools provided by the company. Control can be exercised in the following ways:

- (i) The delivery of work should be within the stipulated time.
- (ii) Issue or return of material should be properly controlled.
- (iii) Finished product should be carefully inspected and defective or sub-standard work should be rejected.

Workers can be sent to site to perform their work. They are known as site workers. Examples are workers employed in construction work, gas and electricity concerns, etc. When a large number of employees are engaged in site work, strict control should be exercised on attendance and wage payment. Time recorded can be checked at the gate and the daily record of attendance can be sent to the accounting department showing the number of workers employed. The period of employment and rates of wages should be determined in advance. These should not be increased or altered without the sanction of the head office. Wages should be calculated in the head office and the head office staff should make the payment. Issue of identity card facilitates identification and avoids the inclusion of dummy workers. Works manager must pay surprise visits to the site to check the attendance.

The site labour can also be controlled by estimating the total labour cost and the time required for each job and comparing the total expenditure from period to period.

### **13. PREPARATION OF PAYROLLS**

The payroll accounting department calculates the wages payable to workers. Wages are calculated on payrolls or wage sheets.

The payroll is a record which shows details of the gross wages earned by each worker in a particular period, the deductions made and the net wages payable. The payroll can be prepared at weekly, fortnightly or monthly periods. It can be prepared departmentwise or shiftwise.

The payroll records information regarding:

- (a) Department
- (b) Wage period
- (c) Workers' ticket number
- (d) Workers name
- (e) Normal hours worked
- (f) Overtime
- (g) Output in the period
- (h) Rate of wages/hour
- (i) Rate of wages/unit
- (j) Total basic

- (k) D.A.
- (l) Bonus
- (m) Deductions
- (n) Net wages.

The labour cost charged to costs is the gross wages of the worker and the employer's contribution to the Provident Fund and ESI etc.

The preparation of payroll involves three steps, viz.

- (a) Collection of basic data;
- (b) Determining the wages payable;
- (c) Preparing the actual payroll.

The attendance of time-rated workers can be verified from the clock cards. Production can be verified from piece work tickets and job card for piece rated workers.

The cost department checks the particulars and calculates the gross wages, the deductions to be made and the net wages payable.

A wage ticket is then prepared for each worker. This enables the worker to verify the amount of wages and also acts as an identification at the time of payment.

A denominational analysis of the money required by different departments or shifts is prepared. The required amount is withdrawn in the required denominations.

The wages of each worker is put in an envelope and paid in the concerned department in the presence of the departmental manager.

Some companies have a practice of preparing a pay slip of each worker, which may be handed over to the worker in advance of the actual payment of wages. The pay slip shows basic wages and details of various allowances like house rent allowance, dearness allowance and other payments like, overtime, bonus etc. and various deductions on account of P.F. contributions, income-tax, recovery of loans, and any other deduction. The net amount payable is shown after making all these adjustments.

#### *Unpaid wages*

Unpaid wages are recorded and the amount sent to the cashier. These can be paid in the office on a particular day.

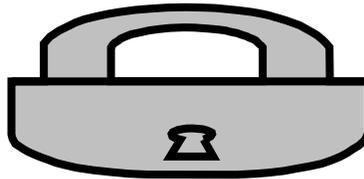
The worker should be identified and it should be ensured that unpaid wages are not paid to dummy workers.

Subsequent payments can be made by the cashier after verifying all facts.

Wages not claimed for a long time can be taken back into the cash account.

**LESSON ROUND UP**

- Direct labour cost is that portion of wages or salaries or salaries which can be identified with and charged to a single cost unit.
- Indirect labour costs are costs which are not identifiable with particular units of costs.
- The term remuneration is used to cover the total monetary earnings of employees which includes wages according to time or piece basis and other financial incentives.
- Under time rate system of wage payment workers are paid according to time for which they work.
- Under piece rate system wages are paid according to quantity of work done.
- Incentive wage plans is a compromise between time rate and piece rate systems and incentives are provided to workers to work hard. The employer as well as the workers share the benefit of time saved and both labour and overhead costs are reduced.
- Labour turnover is the rate of change in the composition of the labour force in an organization.
- Idle time represents the time lost by workers who are paid on time basis.
- The payroll is a record which shows details of the gross wages earned by each worker in a particular period, the deductions made and the net wages payable. The payroll can be prepared at weekly, fortnightly or monthly periods. It can be prepared department wise or shift wise.

**SELF TEST QUESTIONS**

1. Define labour. What is direct labour? What is indirect labour? Give examples. Explain how they are treated in cost accounts.
2. Explain the different methods of time recording for workers. State their merits and demerits.
3. What are the factors that you will take into account before adopting a particular system of wage payment?
4. Explain the term –efficiency of labour”.

5. Discuss the various incentive schemes, their merits and demerits.
6. Discuss the various bonus systems.
7. What is profit sharing? How is it different from co-partnership?
8. What is idle time? Give its treatment in cost accounts.
9. Write short notes on:
  - (a) Labour turnover
  - (b) Idle time
  - (c) Overtime
  - (d) Casual workers
  - (e) Site workers.
10. Describe the preparation of payroll in a factory. What precautions will you take at the time of paying wages?
11. Standard output in 10 hours is 240 units; actual output in 10 hours is 264 units. Wages rate is ₹10 per hour. Calculate the amount of bonus and total wages under Emerson Plan.
12. X, the proprietor of a small engineering workshop producing speciality product by employing 5 skilled workers is considering the introduction of some incentive scheme-either Halsey scheme or Rowan scheme-of wage payment for increasing the labour productivity to cope with the increased demand for the product by about 25%. He feels that if the proposed incentive scheme could bring about an average 20% increase over the present earnings of the workers, it would act as a sufficient incentive for them to produce more and he has accordingly given this assurance to the workers.

As a result of this assurance, an increase in productivity has been observed as revealed from the following figures for the current month:

Hourly rate of wages (guaranteed)	₹5.00
Average time for producing 1 piece by one worker as per the previous performance (X desires that this time be considered as time allowed for the purpose of incentive scheme)	2 hours
No. of working days in the month	25
No. of working hours per day for each worker	8
Actual production during the month	625 pieces

You are required to:

- (a) Calculate effective rate of earnings per hour under Halsey scheme and Rowan scheme.
- (b) Calculate the savings to X in terms of direct labour cost per piece under the above schemes.
- (c) Advise X about the selection of the scheme to fulfill his assurance.

13. Calculate the normal and overtime wages payable to a workman from the following data:

<i>Days</i>	<i>Hours worked</i>
Monday	8 hrs.
Tuesday	10 hrs.
Wednesday	9 hrs.
Thursday	11 hrs.
Friday	9 hrs.
Saturday	4 hrs.

Normal rate - Rs. 5.00 per hour

Normal working hours - 8 hours per day.

Overtime rate - Upto 9 hours in a day at single rate and over 9 hours in a day at double rate;

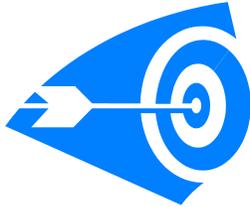
OR

Upto 48 hours in a week at single rate and over 48 hours at double rate, whichever is more beneficial to the workmen.

14. An employee working under a bonus scheme saves 4 hours in a job for which the standard time is 32 hours. Calculate the rate per hour worked and wages payable for the time taken under the following alternative scheme (award rate is Rs. 10 per hour).
- Employee receives an increase in the hourly rate based on percentage that the time saved bears to the time set.
  - A bonus of 10% on award rate is payable when standard time (namely, 100% efficiency) is achieved plus a further bonus of 1% on award rate for each 1% in excess of 100% efficiency.
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STUDY XI  
**DIRECT EXPENSES AND OVERHEADS**

**LEARNING OBJECTIVES**



After studying this lesson you will be able to:

- Understand the concept of direct expenses and overheads.
- Classify the overheads into different categories.
- Explain the procedure for collection, allocation, apportionment and absorption of overheads.
- Understand the basis of apportionment of overheads.
- Describe the methods of re-apportionment of overheads.
- Explain the treatment of under/over absorption of overheads.
- Explain the treatment of administrative, selling and distribution overheads.
- Describe the measures for control of manufacturing, administration and selling and distribution overheads.

**1. DIRECT EXPENSES**

Expenses may be defined as ~~the~~ costs of services provided to an undertaking and the notional costs of the use of owned assets”.

Direct expenses are those expenses which are directly chargeable to a job account. Direct expenses may be defined as those expenses which are easily identifiable and attributable to the individual units or jobs. All expenses other than the direct material or direct labour which are incurred for a particular product or process are termed as direct expenses. Expenses which can be identified with a territory, a customer or product can be considered as direct expenses. Expenses in relation to a department may be direct but are indirect in relation to the product.

\*Direct expenses are defined as ~~costs~~, other than materials or wages, which are incurred for a specific product or salable service.”\*

There is no hard and fast rule regarding classification of expenses into direct and

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\* The term ‘direct expenses’ has been excluded from prime cost as per latest CIMA terminology, i.e. according to CIMA, prime cost is ~~the~~ total cost of direct material and direct labour”.

indirect. Direct expenses are specific charges directly attributable while the indirect expenses are apportioned on suitable basis. Some items by nature are direct but treated as indirect because the amounts chargeable are either of small or negligible value. It is difficult and costly to analyse them and hence treated as indirect expenses, e.g. nuts, screws, thread, glue, etc.

#### *Types of Direct Expenses*

- (i) Royalties if it is charged as a rate per unit.
- (ii) Hire charges of plant if used for a specific job.
- (iii) Sub-contract or outside work, if jobs are sent out for special processing.
- (iv) Salesman's commission if it is based on the value of units sold.
- (v) Freight, if the goods are handled by an outside carrier whose charges can be related to individual units.
- (vi) Travelling, hotel and other incidental expenses incurred on a particular contract.
- (vii) Cost of making a design, pattern for a specific job.
- (viii) Cost of any special process not forming part of the normal manufacture like water proofing for canvas cloth.

#### *Accounting Treatment*

Direct expenses are chargeable expenses and are debited to Direct Expenses Account in financial books. Accounts are prepared in columnar form so that the analysis can be made and the expenses can be related to the specific job/contract.

In cost accounting records, the direct expenses account is credited and the concerned account is debited. The cost department should verify from the accounts department that the expenses are properly booked. These expenses should not be mixed up with overheads.

#### *Control of Direct Expenses*

Items under this head are few. They form a small part of the total cost. Such costs are controlled by fixing standards. The actuals should be compared with the standard. The causes of variations, if any, should be ascertained and necessary corrective action should be taken.

## **2. INDIRECT EXPENSES**

Indirect expenses are expenses other than direct expenses. These refer to those expenses which cannot be directly, conveniently and wholly allocated to cost centres or cost units. A few examples of such expenses are as follows:

- (i) Rent, rates and insurance of factory and office.
- (ii) Depreciation, repairs and maintenance of plants, machinery, furniture, building etc.
- (iii) Power, fuel, lighting, heating of factory and office.
- (iv) Advertising, legal charges, audit fees, bad debts, etc.

*Expenses excluded from costs:* The following types of items are not included in cost of production or sales:

- (a) Matters of pure finance including interest paid and received, dividend received on investments, rent received, profit or loss on sale of investments or company's property, transfer fees received etc.
- (b) Appropriation of profits including income-tax paid, dividends paid, transfer to sinking fund, general reserve, excessive depreciation, goodwill or other fictitious assets written off, etc.

*Notional Expenses:* Expenses that are usually incurred should be included in costs even if a particular firm is not required to pay for such expenses. Rent for own premises is an example. If a firm occupies its own buildings, it does not pay any rent for this, but for costing purposes, an appropriate amount of rent should be included in costs.

### 3. OVERHEADS

Overhead may be defined as the cost of indirect material, indirect labour and such other expenses, including services, as cannot be conveniently charged direct to specific cost centres or cost units. It should be noted that direct costs(materials, labour, etc.) are associated with individual jobs or products. Indirect expenses or overheads are not associated with individual jobs or products; they represent the cost of the facilities required for carrying on the operations. CIMA, London defines overhead as "expenditure on labour, materials or services which can not be economically identified with a specific saleable cost unit".

In modern industrial undertakings, overheads are a very large proportion of the total cost and, therefore, good deal of attention has to be paid to them. It will be a big mistake to pay attention only to direct cost. The problem in respect of overheads arises from the facts that the amount of overheads has to be estimated and that too before the concerned period begins (since it is only continuous costing that is found useful) and that, the amount has to be distributed over the various cost units, again on an estimated basis.

### 4. CLASSIFICATION OF OVERHEADS

The process of classification of overheads involves:

- (a) the determination of the classes or groups in which the costs are sub-divided; and
- (b) the actual process of classification of the various items of expenses into one or another of the groups.

The classification of overheads expenditure depends upon the type and size of a business and the nature of the product or service rendered.

Generally overheads are classified on the following basis:

- (i) Functions-wise classification
- (ii) Behaviour-wise classification
- (iii) Element-wise classification.

#### 4.1 Function-wise Classification

Overheads can be divided into the following categories on functional basis:

- (a) *Manufacturing or production overheads*: Manufacturing overheads includes all indirect costs (indirect material, indirect labour and indirect expenses) incurred for operation of manufacturing or production division in a factory. It is also known as, factory overheads, works overheads, factory cost or works cost etc.
- (b) *Administration overheads*: It is the sum of those costs of general management, secretarial, accounting and administrative services, which cannot be directly related to the production, marketing, research or development functions of the enterprise. Administration overheads include the cost of formulating the policy, directing the organisation and controlling the operations of an undertaking which is not related directly to production, selling, distribution, research or development activity or function.
- (c) *Selling and distribution overheads*: Selling overheads is the cost of seeking to create and stimulate demand and of securing orders. It comprises the cost to products of distributors for soliciting and recurring orders for the articles or commodities dealt in and of efforts to find and retain customers. Distribution overhead is the expenditure incurred in the process which begins with making the packed product available for dispatch and ends with the making the reconditioned returned empty package, if any, available for re-use. It includes expenditure incurred in transporting articles to central or local storage. It also comprises expenditure incurred in moving articles to and from prospective customer as in the case of goods on sale or return basis. In case of gas, electricity and water industries distribution means pipes, mains and services which may be regarded as equivalent to packing and transportation.

#### Examples of different types of overheads

	<i>Production</i>	<i>Administration</i>	<i>Selling and Distribution</i>
	(1)	(2)	(3)
(a)	Indirect materials: Lubricants, cotton waste, stationery, repair materials, etc.	Indirect materials: Office stationery and printing	Indirect materials: (i) Stationery and printing (ii) Catalogues (iii) Price list etc.
(b)	Indirect labour, salaries and wages of: (i) Supervisors, foremen and chargehands (ii) Inspectors (iii) Storekeepers (iv) Maintenance labours	Indirect labour, salaries of: (i) Office clerks (ii) Secretaries (iii) Accountants (iv) Executives (v) Managers and General Manager	Indirect labour, salaries and commission of: (i) Salesmen (ii) Travellers (iii) Agents (iv) Demonstrators and technical advisors to customers

(v) Tool room	(vi) Directors, etc.	(v) Sales manager
(vi) Operators		
(vi) Employees of drawing office		
(vii) Watch and ward staff		
(viii) Welfare staff		
(ix) Works clerical staff		
(x) Works executives including works managers, etc.		
(c) Indirect Expenses:	Indirect Expenses:	Indirect Expenses:
(i) Rent, rates and insurance of factory	(i) Rent, rates and insurance of office	(i) Rent, rates and insurance of showroom, sales office, finished goods, godown, etc.
(ii) Power, lighting and heating of factory	(ii) lighting, heating and cleaning of office	(ii) Advertising expenses
(iii) Depreciation, repairs and maintenance of plant, machinery, factory furniture and fixture and factory buildings	(iii) Depreciation, repairs and maintenance of office, furniture, equipment and buildings	(iii) Expenses on consumers service, after sales service etc.
(iv) Welfare expenses like canteen, medical, recreation service etc.	(iv) Sundry expenses like legal charges audit fees etc.	(iv) Sundry expenses like discount, bad debts etc.

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#### 4.2 Behaviourwise Classification

Based on the behaviour patterns, overheads can be classified into the following categories:

- (i) Fixed overheads
- (ii) Variable overheads
- (iii) Semi-variable overheads.

##### *Fixed overheads:*

Fixed overheads expenses are those which remain fixed in total amount with increases or decreases in volume of output or productive activity for a particular period of time, e.g. managerial remuneration, rent of building, insurance of building, plant etc. Fixed overhead costs remain the same from one period to another

except when they are deliberately changed, e.g. increments granted to staff. The incidence of fixed overhead on unit cost decreases as production increases and *vice versa*.

Fixed overheads are stated to be uncontrollable in the sense that they are not influenced by managerial action. However, it should be noted that an expenditure is fixed within specified limit relating to time or activity. In a hypothetical organisation no expenditure remains unchanged for all time. Therefore, it is true to state that 'fixed overhead is fixed within specified limit relating to time and activity'.

*Variable overheads:*

Variable overhead costs are those costs which vary in total in direct proportion to the volume of output. For instance, if the output increases by 5%, the variable expenses also increase by 5%. Correspondingly, on a decline of the output it will also decline proportionately. Examples are indirect material and indirect labour. Variable overhead changes in total but its incidence on unit cost remains constant.

*Semi-variable overheads:*

These overhead costs are partly fixed and partly variable. They are known as semi-variable overheads because they contain both fixed and variable element. Semi-variable overheads do not fluctuate in direct proportion to volume. It may remain fixed within a certain activity level, but once that level is exceeded, they vary without having direct relationship with volume changes. Examples are depreciation, telephone charges, repair and maintenance of buildings, machines and equipment etc.

Semi-variable expenses usually have two parts—one fixed and other variable. For instance depreciation usually depends on two factors—one time (fixed) and other wear and tear (variable). The two together make depreciation (as a whole) semi-variable. An analytical study thus can make it possible for all semi-variable expenses to be split up into two parts. Fundamentally, therefore, there are only two types of expenses—fixed and variable.

#### **4.2.1 Methods of segregating semi-variable costs into fixed and variable costs**

Separation of semi-variable cost into fixed and variable can be done by applying any of the following methods:

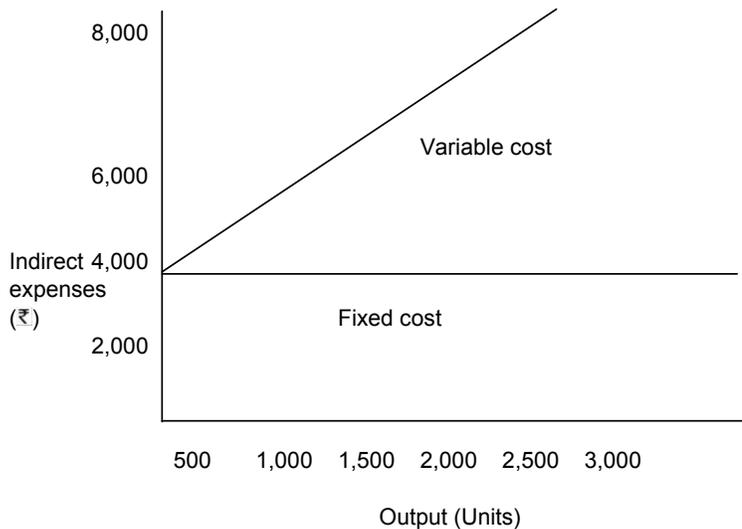
(i) *Graphical presentation method:* Under this method, a good number of observations in respect of the total costs at different levels of activity or output are plotted on a graph with the output on the X-axis and their corresponding costs on the Y-axis. Then by judgment a line of 'best fit' which passes through all or most of the points is drawn. Points falling far behind the line are erratic and are not considered for this purpose. The point at which the cost line touches the Y-axis is taken to be the fixed element of cost. From this point a line parallel to X-axis is drawn to represent fixed cost line. The variable cost, at any level of output, is derived by deducting this fixed cost element from the total cost.

**Illustration 1**

You are given the following information:

Month	Output Units	Indirect Expenses (₹)
April	1,500	6,000
May	1,800	6,600
June	2,100	7,200
July	2,820	8,640
August	2,220	7,440

Plot the above information on the graph to draw a line of best fit.

**Solution:**

(ii) *Least square method*: In this method 'line of best fit' is drawn for a number of observations with the help of statistical method. This method uses the linear equation  $y=mx+c$ , where 'm' represents the variable element of cost per unit, 'c' represents the total fixed cost, 'y' represents the total cost and 'x' represents the volume of output. The relationship between fixed and variable cost can be illustrated on the basis of the above example.

Month	Units of Output	Indirect Expenses (₹)	Deviation of output from the mean (2088)x	Deviation of expenses from the mean (7176)y	x <sup>2</sup>	xy
April	1,500	6,000	- 588	- 1176	3,45,744	6,91,488
May	1,800	6,600	- 288	- 576	82,944	1,65,888
June	2,100	7,200	+ 12	+ 24	144	288
July	2,820	8,640	+732	+1464	5,35,824	10,71,648
August	2,220	7,440	+132	+ 264	17,424	34,848
					$\sum x^2 =$ 9,82,080	$\sum xy =$ 19,64,160

Variable charges:

$$\frac{\sum xy}{\sum x^2} = \frac{19,64,160}{9,82,080} = ₹2$$

Fixed expenses = Mean expenses - (Mean output x Variable charges per unit)

$$\begin{aligned} &= ₹7,176 - (2,088 \times ₹2) \\ &= ₹7,176 - 4,176 \\ &= ₹3,000 \end{aligned}$$

The line on the graph will, therefore, be represented by:

$$\begin{aligned} y &= mx + c \\ y &= 2x + 3,000 \text{ where,} \\ y &= \text{total cost, } x = \text{number of units.} \end{aligned}$$

(iii) *High and low points method*: Under this method the output at two different levels i.e. high or low point is compared with the amount of expenses incurred at these different periods. The example above can be worked out as follows:

	Output	Indirect expenses
Highest	2,820	8,640
Lowest	<u>1,500</u>	<u>6,000</u>
Difference	<u>1,320</u>	<u>2,640</u>

$$\text{Variable cost per unit} = \frac{\text{Rs. } 2,640}{1,320} = ₹2 \text{ per unit.}$$

(iv) *Analytical method*: Under this method, the degree of variability is estimated for each item of semi-variable expenses. For instance, some semi-variable expenses may have 20% variability while others may vary to the extent of 70%.

(v) *Comparison by period or level of activity method*: Under this method output and expenses at two levels are compared. Fixed overhead remain fixed and variable overhead can be obtained by the following formula:

$$\frac{\text{Change in the amount of expenses}}{\text{Change in activity or quantity}}$$

#### 4.2.2 Advantages of classification of overheads into fixed and variable

(i) *Effective cost control*: The classification of expenses into fixed and variable helps in controlling expenses. Fixed expenses are incurred by management decisions and are incurred irrespective of the output, hence it is more or less uncontrollable. Variable expenses vary with the volume of activity and the responsibility for incurring this expenditure is determined in relation to output.

(ii) *Preparation of budget estimates*: Unless a distinction between fixed and variable expenses is made, it would not possible to prepare a flexible budget in a given period on the basis of different levels of activity. For instance in March 2011, the output of the factory is 2,000 units and the expenses are as follows:

	₹
Fixed	10,000
Variable	8,000
Semi-variable (40% fixed)	<u>9,000</u>
	<u>27,000</u>

In April 2011, the output is likely to increase by 500 units. In this case the budget or estimate expenses will be as follows:

	₹
Fixed	10,000
Variable $\left[ \frac{8,000}{2,000} \times 2,500 \right]$	10,000
Fixed	3,600
Variable $\left( ₹ 5,400 \times \frac{5}{4} \right)$	6,750
	<u>30,350</u>

(iii) *Ascertaining Marginal Cost — Decision Making*: A number of decisions of management depend upon a comparison of (a) the extra amount that would have to be spent if an additional activity is undertaken or an alternative course is adopted, and (b) measurement of the benefits resulting therefrom. The extra amount that will have to be spent will only be the variable costs (including materials, labour and variable expenses) and not fixed expenses. Therefore, a distinction between fixed and variable expenses is essential. Marginal costs (or variable costs) afford a number of advantages, in fixing prices in a special market, for a special customer and

during a slump or a period of depression, decision on make or buy, shut down or continue etc. The main principle is that if the price available is above the variable or marginal cost, profits would increase or losses would decrease because of additional units sold. This is because fixed expenses would not increase.

Suppose, a factory having a capacity of 10,000 units per month produces and sells 8,000 units @ ₹20 each, the total costs being:

Variable	₹
	1,00,000
Fixed	<u>40,000</u>
	<u>1,40,000</u>

On a sale of 8,000 units @ ₹20 (total sales ₹1,60,000), there would be a profit of ₹20,000. If another 2,000 units can be sold @ ₹15, say to the Government, the profit would increase to ₹25,000. Thus:

Variable Costs	₹
$\frac{1,00,000}{8,000} \times 10,000$	1,25,000
Fixed Costs	<u>40,000</u>
	<u>1,65,000</u>
Sales: 8,000 units @ ₹20	1,60,000
2,000 units @ ₹15	<u>30,000</u>
	<u>1,90,000</u>
Profit	<u>25,000</u>

Profit maximisation is possible only if marginal and fixed costs are distinguished. The advantages of marginal costs will be discussed in a later study.

#### 4.3 Element-wise Classification

Based on its elements overhead is classified in the following categories :

- (i) Indirect material
- (ii) Indirect labour
- (iii) Indirect expenses.

#### 5. STANDING ORDER NUMBERS

In order to have an effective analysis of the expenses, each of the manufacturing, administration, selling and distribution overhead cost is classified into smaller subdivision to ensure that expenses of similar nature are grouped together under one head. This is done through a system of standing order numbers or syllabus numbers.

In large factories normally, the classification of indirect expenditure is combined with a system of standing orders. It is a system under which a number is allotted to each item of expense for the purposes of identification, and the same is continued from year to year. Whenever the actual expenses are incurred, they are appropriately classified into one of these standing order numbers. Periodical summaries giving totals of each standing order are prepared for comparison with budgets as well as apportioning them among the various departments.

## 6. TREATMENT OF FACTORY OVERHEADS

Generally factory overheads form a substantial portion of the total overheads. It is very important therefore, that such overheads are properly absorbed over the cost of production.

The following are the steps involved in accounting of overheads :

- (i) The overhead expenses incurred by various departments are collected and accumulated under appropriate standing order numbers in the overhead expenses ledger.
- (ii) Allocation of overheads to production and service departments.
- (iii) Apportionment of such overheads which can not be allocated.
- (iv) Re-appointment of service department expenses to production departments.
- (v) The total overhead expenses incurred by steps (i) to (iv) above represents the total overhead cost of production departments.
- (vi) An overhead rate is to be computed for each department on the basis of estimated, actual or normal expenses and normal rate of working.
- (vii) The departmental overheads are applied or charged to the cost of products manufactured by different departments at a rate determined in the foregoing manner.
- (viii) Periodical comparison of actuals with absorbed expenses to find out under or over absorption of overheads.

## 7. COLLECTION OF OVERHEADS

When classification of overheads on some scientific and consistent basis is complete, overheads are regularly collected i.e. estimated under standing order code numbers allotted to them. For the collection of overhead expenses the following are some of the primary documents used.

- (i) Stores requisitions
- (ii) Job cards or tickets
- (iii) Invoices or purchase voucher
- (iv) Salary or pay bills
- (v) Cash book
- (vi) Subsidiary records.

Indirect materials originate in store requisitions. Each stores requisitions note specifies the standing order number and the department for which the stores are drawn. The departmentalisation is done at sources. A material issue analysis sheet is prepared from store requisitions. At the end of each month, the total of these items is charged or debited to Factory Overhead Control Account and credited to Stores Ledger Control Account.

Indirect labour is obtained in the first place, from the time cards and pay rolls. Wages paid to workers against each standing order number can be obtained from the

time tickets or job cards. From the time tickets, the wages analysis sheet is prepared each month and at the end of the month, the total is debited to Factory Overhead Control Account and credited to the Wages account.

Indirect expense can come from several sources such as cash book, factory journals or vouchers. In the case of cash outlays, the entry may come from the cash book. Expenses such as depreciation and other adjustment items which do not result from cash outlays are taken from subsidiary records. At the end of the period, the total of factory overheads would be debited to Factory Overhead Control Account and credited to the Cost Ledger Control Account.

Some expenses such as power, lighting, heating, rent, etc. may not be solely applicable to factory overheads, but should be apportioned between Factory expenses, Selling expenses and Administration expenses.

Each item of overheads may be seen and proper estimate of the amount for the coming period may be prepared. Another way, more expeditious, is to analyse the total overheads into fixed and variable and then arrive at the estimate by adjusting the variable amount by the expected change in output and the fixed amount by such changes as employment of more people, increments, etc.

#### **8. ALLOCATION AND APPORTIONMENT OF OVERHEADS (DEPARTMENTALISATION OF OVERHEADS)**

Most of the manufacturing process functionally are different and performed by different departments in a factory. Where such a division of functions has been made, some of the departments would be engaged in actual production of goods while others in providing services ancillary thereto.

For the efficient working, a factory is divided into a number of sub-divisions. Such sub-divisions are referred to as departments. In other words, departmentalisation of overhead means dividing the factory into several segments called departments or cost centres to which expenses are charged. This sub-division is done in such a manner so that each department represents a division of activity of the organisation such as repairs department, power department, tools department, stores department, cost department, cash department, etc. The following factors are taken care of while dividing an organisation into number of departments:

- (i) Every manufacturing process is divided into its natural divisions in order to maintain natural flow of raw materials from the time of its purchase till its conversion into finished goods and sale.
- (ii) The sequence of operations are taken into consideration while determining the location of various departments.
- (iii) Division of responsibility as far as possible should be clear, without ambiguity and dual control.

The departments in a factory can be broadly categorised into the following types:

(i) *Producing or manufacturing departments:* A manufacturing or producing department is one in which manual/machine operations and other process of

production of articles or commodities take place. The number of such departments will depend upon the nature of industry, type of work performed and the size of the factory.

(ii) *Service departments*: These departments are not directly engaged in production but they render special type of service for the benefit of other departments.

(iii) *Partly producing departments*: In every organisation a few departments such that it is not possible to place these departments into a particular category, since they fall within the purview of both categories, i.e. producing and service departments. For example, if a toolroom manufactures some special tools for utilisation in the main job orders, it is acting as a productive department though it is a service department.

*Advantages of Departmentalisation*:

- (i) It segregates factory overhead costs and computes the total cost of each service departments.
- (ii) It makes possible the establishments of control to keep costs at a minimum.
- (iii) Ascertainment of cost of different departments helps in computing the cost of different jobs or products which pass through these departments.

*Allocation of overheads*: After having collected the overheads under proper standing order numbers the next step is to arrive at the amount for each department or cost centre. This may be through allocation or absorption. According to the Chartered Institute of Management Accountants, London, cost allocation is "that part of cost attribution which charges a specific cost to a cost centre or cost unit". Thus, the wages paid to maintenance workers as obtained from wages analysis book can be allocated directly to maintenance service cost centre. Similarly indirect material cost can also be allocated to different cost centres according to use by pricing stores requisitions.

*Apportionment of overheads*: Apportionment refers to the distribution of overheads among departments or cost centres on an equitable basis. In other words, apportionment involves charging a share of the overheads to a cost centre or cost unit. CIMA, London has defined it as "that part of cost attribution which shares costs among two or more cost centres or cost units in proportion to the estimated benefit received, using a proxy". Apportionment is done in case of those overhead items which cannot be wholly allocated to a particular department. For example, the salary paid to the works manager of the factory, factory rent, general manager's salary etc. cannot be charged wholly to a particular department or cost centre, but will have to be charged to all departments or cost centres on an equitable basis.

### **8.1 Primary distribution of overheads**

Primary distribution of overhead involves allocation or apportionment of different items of overhead to all departments of a factory. This is also known as departmentalisation of overheads. While making primary distribution the distinction between production departments and service departments disregarded since it is of little use. The distribution of different items of overhead in different departments is attempted on some logical and reasonable basis.

*Basis of apportioning overhead expenses:* It is stated that the total overhead expenses of a department comprises direct overhead expenses incurred in the departments itself as well as the apportioned overhead expenses of other service departments. Expenses directly incurred in the departments which are jointly incurred for several departments have also to be apportioned e.g. expenses on rent, power, lighting, insurance etc. In other words, common expenses have to be apportioned or distributed over the departments on some equitable basis. The following basis are most commonly used for apportioning items of overhead expenses among production and service departments.

<i>Basis</i>	<i>Items of Overheads</i>
1. Floor area	Rent, rates and taxes paid for the building, air conditioning, etc.
2. No. of employees or wages of each department	Group insurance, canteen expenses, E.S.I. contribution, general welfare expenses, compensation and other fringe benefits, supervisions etc.
3. Capital values	Insurance and depreciation of plants, machinery and equipments.
4. Direct labour hours	Works manager's remuneration, general overtime expenses, cost of inter-department transfers etc.
5. No. of light points	Electric light
6. Horse power of machines or machine hours	Electric power
7. Audit fee	Sales or total cost
8. Value or weight of direct material	Stores overheads
9. Weight, volume, tonne, mile.	Delivery expenses

### **8.2 Re-apportionment of service department overheads (Secondary Distribution)**

Normally products do not pass through service departments, but service departments do benefit the manufacture of products. Therefore, it is logical that product cost should bear an equitable share of the cost of service departments. The process of redistribution of the cost of service departments among the production departments is known as secondary distribution.

#### *Criteria for secondary distribution*

- (i) *Service or use method:* Under this method overheads are distributed over various production departments on the basis of service received. The greater is the amount of service received by a production department, the greater should be the share to be apportioned to that department. This criterion has greatest applicability in cases where overhead costs can be easily and directly traced to departments receiving the benefits. Since this method is

based upon the extent of the benefit received by a department, the expenses are equitably apportioned. This method is considered to be fair as it takes into account the time element and consistent results.

- (ii) *Analysis or survey*: In certain cases it may not be possible to measure exactly the extent of benefit which the various departments receive as this may vary from period to period. Therefore, overheads are apportioned on the basis of analysis and survey of existing conditions. This basis of apportionment includes arbitrary elements.
- (iii) *Ability to pay*: This method presumes that higher the revenue of a production department, higher should be the proportionate charge for services. This method is simple to apply but it is generally considered inequitable because it penalises the efficient and profitable units of a business to the advantage of the inefficient ones.
- (iv) *Efficiency or incentive method*: This basis facilitates scientific distribution of service department cost to production departments. Under this method the apportionment of expenses is made on the basis of production targets. If the target is exceeded the unit cost reduces indicating a more than average efficiency. Opposite is the effect if the assumed levels are not reached. Thus, the department whose sales are increasing is able to show a greater profit and thereby is able to earn greater goodwill and appreciation of the management.
- (v) *General use of indices*: If data relating to actual services rendered can not be obtained in some situations this method is adopted. The index selected is closely related to assured flow of service department cost to production departments. For instance, the service of cost accounting department can be apportioned to production departments on the basis of number of employees in each department.

Following is a list of basis, which are frequently used for apportionment of cost of service departments among production departments:

<i>Service department costs</i>	<i>Basis of apportionment</i>
1. Maintenance department	Hours worked for each department.
2. Employment/personnel department	Rate of labour turnover or number of employees in each department.
3. Payroll or time department	Direct labour hours, machine hours number of employees.
4. Stores keeping department	No. of requisitions, quantity or value of materials.
5. Welfare department	No. of employees in each department.
6. Internal transport service	Truck hours, truck mileage or tonnage.
7. Building service department	Relative area of each department.
8. Power house	Floor area, cubic contents.

### 8.3 Methods of Re-apportionment or Re-distribution

At first expenses of all departments are compiled without making a distinction between production and service departments but, then, the expenses of the service departments are apportioned among the production departments on a suitable basis. It is also possible that expenses of one service department may also be apportioned in part to another service department to arrive at the total expenses incurred on the latter department, which will then be distributed among production department.

Following are the methods of re-distribution of service department costs to production departments:

- (i) *Direct distribution method:* Under this method, the cost of service department are directly apportioned to production departments, without taking into consideration any service from one service departments to another service department.
- (ii) *Step method:* In this method the cost of most serviceable department is first, apportioned to other service departments and production departments. The next service department is taken up and its cost is apportioned and this process is going on till the cost of last service department is apportioned. The cost of last service department is apportioned among production departments only.
- (iii) *Reciprocal service method:* This method gives cognizance to the fact that where there are two or more service departments, they may render service to each other and therefore these inter-departmental services are to be given due weight in distributing the expenses of service departments. There are three methods available for dealing with inter service department transfer :
  - (a) *Simultaneous equation method:* Under this method, the true cost of service departments are ascertained first with the help of simultaneous equations. These are then distributed among the production departments on the basis of given percentages.
  - (b) *Repeated distribution method:* According to this method service department costs are apportioned over other departments, production as well as service according to the agreed percentages and this process is repeated until the total costs of the service departments are exhausted or the figures become to small to be considered for further apportionment.
  - (c) *Trial and error method:* In this method the cost of one service department is apportioned to another service department. The cost of another service department plus the share received from the first service department is again apportioned to first service department and this process is continued until the balancing figure becomes nil. For instance, suppose there are two service departments x and y. These service departments render service to each other. Cost of service department x will be distributed to service department y. Again cost of service department y plus the share from service department x will be apportioned to x. The amount so apportioned to x will continue to be repeated till amount involved becomes negligible.

**Illustration 2**

A company's production for the year ending 30.3.2011 is given below:

Items	Production Departments			Office	Stores	Workshop	Total
	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>				
Direct Wages	₹ 20,000	25,000	30,000	-	-	-	75,000
Direct Materials	₹ 30,000	35,000	45,000	-	-	-	1,10,000
Indirect Materials	₹ 2,000	3,000	3,000	1,000	2,000	2,000	13,000
Indirect Wages	₹ 3,000	3,000	4,000	10,000	10,000	5,000	35,000
Area in Square Metres	200	250	300	150	100	250	1,250
Book value of Machinery	₹ 30,000	35,000	25,000	-	-	15,000	1,05,000
Total H.P. of Machinery	15	20	25	-	-	5	65
Machine Hours Worked	10,000	20,000	15,000	-	-	5,000	50,000

General Expenses:

- (i) Rent ₹12,500
- (ii) Insurance ₹1,050
- (iii) Depreciation 15% of value of machinery
- (iv) Power ₹3,800
- (v) Light ₹1,250

You are required to prepare an overhead analysis sheet for the departments showing clearly the basis of apportionment when necessary.

**Solution:**

**Overhead Analysis Sheet**

Items	Basis of Apportionment	Production Departments			Service Departments			Total
		P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	Office	Stores	Workshop	
		₹	₹	₹	₹	₹	₹	₹
Direct Materials	Actual	2,000	3,000	3,000	1,000	2,000	2,000	13,000
Direct Wages	Actual	3,000	3,000	4,000	10,000	10,000	5,000	35,000
Rent	Area	2,000	2,500	3,000	1,500	1,000	2,500	12,500
Insurance	Value of Machinery	300	350	250	-	-	150	1,050
Depreciation	-do-	4,500	5,250	3,750	-	-	2,250	15,750
Power	H.P.	877	1,169	1,462	-	-	292	3,800
Light	Area	200	250	300	150	100	250	1,250
		12,877	15,519	15,762	12,650	13,100	12,442	82,350
Apportionment of workshop O.H.	Machine hour	2,765	5,530	4,147	-	-	(-)12,442	-
Apportionment of Stores O.H.	Direct material	3,573	4,168	5,359	(-)13,100	-	-	-
Apportionment of Office O.H.	Direct wages	3,373	4,217	5,060	(-)	12,650	-	-
		22,588	29,434	30,328	-	-	-	82,350

**Illustration 3**

A factory has two service departments P and Q and three production departments A, B, and C. You are supplied with the following information:

Particulars	Total	Production Departments			Service Departments	
		A	B	C	P	Q
	₹	₹	₹	₹	₹	₹
Rent	12,000	2,400	4,800	2,000	2,000	800
Electricity	4,000	800	2,000	500	400	300
Indirect labour	6,000	1,200	2,000	1,000	800	1,000
Depreciation of machinery	5,000	2,500	1,600	200	500	200
Sundries	4,500	910	2,143	847	300	300
Estimated working hours		1,000	2,000	1,400		

Expenses of Service Departments P and Q are apportioned as under:

	A	B	C	P	Q
P	30%	40%	20%	-	10%
Q	10%	20%	50%	20%	-

You are required to show the apportionment of overheads under different methods of apportioning inter-service departments overheads and also to work-out the production hour rate recovery of overheads in departments A, B and C.

**Solution:**

**Department distribution summary**

Item	Total	Production Departments			Service Departments	
		A	B	C	P	Q
	₹	₹	₹	₹	₹	₹
Rent	12,000	2,400	4,800	2,000	2,000	800
Electricity	4,000	800	2,000	500	400	300
Indirect labour	6,000	1,200	2,000	1,000	800	1,000
Depreciation of machinery	5,000	2,500	1,600	200	500	200
Sundries	4,500	910	2,143	847	300	300
	31,500	7,810	12,543	4,547	4,000	2,600

(i) *Simultaneous equation method:*

p = total overhead of Deptt. P

q = total overhead of Deptt. Q

$$p = 4,000 + \frac{20}{100} q \quad \dots(i)$$

$$q = 2,600 + \frac{10}{100} p \quad \dots(ii)$$

$$\text{So, } 10p = 40,000 + 2q \quad \dots(\text{iii})$$

$$10q = 26,000 + p \quad \dots(\text{iv})$$

By rearranging

$$10p - 2q = 40,000 \quad \dots(\text{v})$$

$$-p + 10q = 26,000 \quad \dots(\text{vi})$$

Multiplying (vi) by 10

$$10p - 2q = 40,000 \quad \dots(\text{vii})$$

$$\underline{-10p + 100q = 2,60,000}$$

$$\underline{\hspace{1.5cm} 98q = 3,00,000}$$

$$q = 3,061$$

$$\text{and, } p = 4,000 + \frac{1}{5} (3,061)$$

$$= 4,000 + 612$$

$$= 4,612.$$

#### Overhead distribution summary

Particulars	A (₹)	B (₹)	C (₹)
As per distribution summary	7,810	12,543	4,547
Service department P (90% of ₹4,612)	1,384	1,845	922
Service department Q (80% of ₹3,061)	306	612	1,531
	<u>9,500</u>	<u>15,000</u>	<u>7,000</u>
No. of working hours	<u>1,000</u>	<u>2,500</u>	<u>1,400</u>
Rate per hour	9.50	6.0	5.0

(ii) Repeated distribution method:

#### Secondary distribution summary

Particulars	A (₹)	B (₹)	C (₹)	P (₹)	Q (₹)
As per summary	7,810	12,543	4,547	4,000	2,600
Service department P	1,200	1,600	800	- 4,000	400
Service department Q	300	600	1,500	600	- 3,000
Service department P	180	240	120	- 600	60
Service department Q	6	12	30	12	- 60
Service department P	4	5	3	- 12	
Total	<u>9,500</u>	<u>15,000</u>	<u>7,000</u>		
Working hours	<u>1,000</u>	<u>2,500</u>	<u>1,400</u>		
Rate per hour	9.50	6.00	5.00		

(iii) Trial and error method:

	Dept. P (₹)	Dept. Q (₹)	
As per summary	4,000	2,600	
		400	(10% of 4,000)
(20% 3,000)	600 (3,000)		
		(600) 60	(10% of 600)
(20% 60)	12 (60)		
		(12) 1	(10% of 12)
	<u>4,612</u>	<u>3,061</u>	

The total cost of service department of P and Q shall subsequently be apportioned to production department A, B and C.

## 9. ABSORPTION OF OVERHEADS

Absorption of overheads refers to charging of overheads to individual products or jobs. The overhead expenses pertaining to a cost centre are ultimately to be charged to the products, jobs etc. which pass through that cost centre. For the purpose of absorption of overhead to individual jobs, processes or products, overheads absorption rates are applied. The overhead rate of expenses for absorbing them to production may be estimated on the following three basis.

- (i) The figure of the previous year or period may be adopted as the overhead rate to be charged on production in the current year.
- (ii) The overhead rate for the year may be determined on the basis of the estimated expenses and anticipated volume of production or activity.
- (iii) The overhead rate for the year may be determined on the basis of normal volume of output or capacity of the business.

*Actual and pre-determined overhead rate:* The overhead absorption rate may be computed either based on actual cost or on the basis of estimated cost:

### 9.1 Actual Overhead Rate

This is also known as historical overhead rate. This rate is obtained by dividing the overhead expenses incurred during the accounting period by the actual quantum (quantity/value) of the base selected. This rate is determined as follows:

$$\text{Actual overhead rate} = \frac{\text{Actual overhead for the period}}{\text{Actual quantity or value of the base for the period}}$$

This method suffers from the following limitations:

- (i) Actual overhead rate cannot be determined until the end of the period.
- (ii) Seasonal or cyclical influences cause wide fluctuations in the actual overhead cost and actual volume of activity.
- (iii) Actual cost is generally used for comparison with the predetermined figures for the purpose of control. Thus, it is useful only when compared with the established norms or standards.

### 9.2 Pre-determined Overhead Rate

Pre-determined overhead rate is determined in advance of the actual production and is computed by dividing the budgeted overhead expenses for the accounting period by the budgeted base for the period i.e.

$$\text{Pre-determined overhead rate} = \frac{\text{Budgeted overhead for the period}}{\text{Budgeted base for the period}}$$

This computation of a pre-determined overhead rate is more practical and has the following advantages:

- (i) Pre-determined overhead rate facilitates product cost determination immediately after production is completed.
- (ii) In those concerns where the budgetary control system is in operation, all the data for the purpose of calculation of pre-determined overhead rate is available without any extra clerical cost.
- (iii) It is useful when cost plus contracts are undertaken.
- (iv) Cost estimating and competitive pricing offer ideal situations for use of pre-determined overhead rates.

### 9.3 Blanket and Multiple Overhead Rates

Blanket overhead rate refers to the use of one single or general overhead rate for the whole factory.

The blanket rate is used in those factories :

- (a) Where only one major product in continuous process is being produced.
- (b) Where several products are produced it can be applied only if:
  - (i) all products pass through all departments; and
  - (ii) all products are processed for the same length of time in each department.

This rate is calculated as follows :

$$\text{Blanket overhead rate} = \frac{\text{Overhead cost for the entire factory}}{\text{Base for the period}}$$

When different rates are computed for each producing department, service department, cost centre, each product or product line, each production factor, and for fixed overhead and variable overhead, then they are known as multiple rates. It is calculated as under:

$$\text{Overhead rate} = \frac{\text{Overhead cost allocated and apportioned to each cost centre}}{\text{Corresponding base}}$$

## 10. METHODS OF ABSORBING PRODUCTION OVERHEADS

Before we describe the various methods, it would be better to know how to judge whether a method will give good results or not. The method selected for charging overheads to jobs or products should be such as will ensure:

- (i) that the total amount charged (or recovered) in a period does not differ materially from the actual expenses incurred in that period. In other words, there should not be any material over or under-recovery of overheads; and
- (ii) that the amount charged to individual jobs or products is equitable. In case of factory overheads, this means -
  - (a) that the time spent on completion of each job should be taken into consideration;
  - (b) that a distinction should be made between jobs done by skilled workers and those done by unskilled workers. Usually, the latter class of workers need more supervision, as they cause greater wear and tear of machines and tools and waste a larger quantity of materials. Hence jobs done by such workers should bear a correspondingly higher burden for overheads; and
  - (c) that jobs done by manual labour and those done by machines should be distinguished. It stands to reason that no machine expenses should be charged to jobs done by manual labour.

In addition, the method should :

- (i) be capable of being used conveniently; and
- (ii) yield uniform results from period to period as far as possible any change that is apparent should reflect a change in the underlying situation, such as substitution of human labour by machines.

Several methods are commonly employed for computing the appropriate overhead rate to be employed. The common methods are as under:

- (1) Percentage of direct materials cost.
- (2) Percentage of prime cost.
- (3) Percentage of direct labour cost.
- (4) Direct labour hour rate.
- (5) Machine hour rate.
- (6) Combined machine hour and labour hour rate.
- (7) Rate per unit of production.

### 10.1 Percentage of direct material cost

In this method the cost of direct materials used in the manufacture of a product is used as the base in absorption of factory overheads. The overhead rate is calculated

on the basis of the following formula:

$$\text{Overhead rate} = \frac{\text{Factory overheads}}{\text{Direct material cost}} \times 100$$

This method gives satisfactory results in the following circumstances:

- (i) Where the proportion of overheads to the total cost is significant.
- (ii) Where the prices of materials are stable.
- (iii) Where the output is uniform i.e. only one kind of article is produced.

*Advantages:*

- (i) The calculation of overhead rate is simple as the cost of direct material is easily available.
- (ii) This method is more suitable when prices of materials are fairly stable.
- (iii) Overhead cost pertaining to upkeep and handling of materials can be absorbed equitably by this method.

### 10.2 Percentage on prime cost

An actual or pre-determined rate of overhead absorption is calculated by dividing the overheads to be absorbed by the prime cost incurred or expected to be incurred and expressing the result as a percentage. This is calculated as follows:

$$\text{Prime cost percentage rate} = \frac{\text{Amount of factory overheads}}{\text{Prime cost}} \times 100$$

This method has the advantage of simplicity and is applied because it considers both material and labour which gives rise to overhead expenses.

These two methods are generally considered to be unsuitable on account of the following reasons.

(1) Manufacturing overhead expenses are firstly a function of time, i.e., time is the determining factor for the incurrence and application of manufacturing overhead expenses. The overhead expenses, specially manufacturing expenses, can in the ultimate analysis be regarded as expenditure incurred in providing the necessary facilities and services to workers employed in the productive processes. The question of facilities and services made available to workers naturally is dependent on the length of the time during which the workers make use of these facilities. It may, therefore, be said that the job or product on which more time has been spent would entail larger manufacturing expenses than the job requiring lesser time. This factor is altogether ignored by the first method.

(2) When the overhead cost is allocated as a percentage of direct materials or prime cost, the same is the determining factor. As a result, when there are two jobs, otherwise absolutely similar and requiring same operational time but using materials having varying prices, their manufacturing overhead cost would be different; these should not normally vary if time taken is the same.

The method of apportioning overhead costs on the basis of prime cost also does not take into consideration the time factor. The fact that the amount includes labour

cost over and above materials cost, does not render the prime cost any more suitable; in fact, the results are liable to be more misleading because of the cumulative error of using both the labour and materials cost as the basis of allocation of overhead expenses, on neither of which they are dependent.

(3) There is no close or direct connection between the manufacturing expenses and the direct materials cost or prime cost of jobs produced.

(4) Since material prices are prone to frequent and wide fluctuations, the amount of manufacturing overheads recovered, if based on material cost or prime cost, also would fluctuate violently from job to job and from period to period.

(5) The skill of the workers involved and whether machines were used or not, are ignored.

### 10.3 Percentage of direct labour cost

According to this method, the manufacturing overhead expenses are charged as a percentage of the direct wages incurred on jobs. The formula for computing the percentage rate for a period is as follows:

$$\frac{\text{Manufacturing overhead expenses}}{\text{Direct wages or labour cost}} \times 100$$

The numerator for overhead expenses and the denominator for direct wages may be either an estimated sum, actual amount or normal amount. As has been stated earlier, overhead rates are usually predetermined and the use of actual figures is not very common.

This method also fails to give due recognition to the element of time which is of prime importance in the accounting for and treatment of manufacturing overhead expenses except in so far as the amount of wages is a product of the rate factor multiplied by the time factor. Thus, the time factor is taken to consideration only indirectly or partially in the computation of the overhead percentage rate. This method, therefore, cannot be depended upon to produce very accurate results where the same type of work is performed at the same time by different type of workers, skilled and unskilled, with varying rates of pay. Also no distinction is made between jobs done by manual labour and those done by machines.

In spite of the inaccuracies which may arise under this method, it is widely used in actual practice, because it is simple and does not involve much calculations; for in costing any job, the labour cost has to be ascertained anyhow. If, on the other hand, a more scientific method is employed, e.g., the labour hour or the machine hour rate, which gives proper allowance to the time element, these would introduce more complexities in the overhead accounting procedure. Thus, the advantage of elimination of a small error in practice may be a heavy price to pay on account of introduction of complexities aforementioned. Also, under this method, there is no large over or under recovery of overheads.

#### *Advantages*

- (i) The method is simple and economical to apply;

- (ii) The time factor is given fair recognition;
- (iii) Total expenses recovered will not differ much from the estimated figure since total wages paid are not likely to fluctuate much.

#### *Disadvantages*

- (i) It gives rise to certain inaccuracies as the time factor is not being given adequate importance;
- (ii) Where machinery is used to some extent in the process of manufacture, an allowance for such a factor is not made; and
- (iii) It does not provide for varying skills of workers.

It is possible to consider the time factor fully by ascertaining the factory overheads per productive labour hour. Suppose the total of direct productive labour hours is 1,50,000 and the factory overheads total ₹3,00,000, then the productive labour hour rate is ₹2.

#### **10.4 Direct labour hour rate**

This method is a distinct improvement on the percentage of direct wages basis, as it fully recognises the significance of the element of time in the incurring and application of manufacturing overhead expenses. This method is admirably suited to operations which do not involve any large use of machinery. A direct labour hour rate is calculated for each category of workers. The expenses incurred, other than wages paid to workers, on each category of workers are listed and totalled for a period. The figure is divided by the number of hours to be put in by that category of workers. Thus, full attention will be paid to the skill of the workers for charging overheads. Productive labour hour rate is a variation of this method. It is computed by dividing the total factory expenses for a period by the total number of hours put in by all the direct workers during that period. Thus, this method, though making no allowance for the skill of workers, gives full recognition to the time factor.

#### **10.5 Machine hour rate**

By the machine hour rate method, manufacturing overhead expenses are charged to production on the basis of a number of hours a machine or machines are used on jobs or work orders. There is a basic similarity between the machine hour and the direct labour hour rate methods, in so far as both are based on the time factor. The choice of one or the other method is conditioned by the actual circumstances of the individual case. In respect of departments or operations, in which machines predominate and the operators perform relatively a passive part, the machine hour rate is more appropriate. This is generally the case for operations or processes performed by costly machines, which are automatic or semiautomatic and where operators are needed merely for feeding and tending them rather than for regulating the quality or quantity of their output. In such cases, the machine hour rate method alone can be depended on to correctly apportion the manufacturing overhead expenses to different items of production. What is needed for computing the machine hour rate is to divide overhead expenses for a specific machine or group of machines

for a period by the operating hours of the machine or the group of machines for the period. It is calculated as follows:

$$\text{Machine hour rate} = \frac{\text{Amount of overheads}}{\text{Machine hours during a given period}}$$

Usually, the computation is made on the basis of the estimated expense or the normal expense for the coming period. Thus, the machine hour rate usually is a predetermined rate. Rate for each individual machine may be worked out or, where a number of similar machines are working in a group, there may be a single rate for the whole group.

The following steps are required to be taken for the calculation of machine hour rate:

- (i) Each machine or group of machine should be treated as a cost centre.
- (ii) The estimated overhead expenses for the period should be determined for each machine or group of machines.
- (iii) Overheads relating to a machine are divided into two parts i.e. fixed or standing charges and variable or machine expenses.
- (iv) Standing charges are estimated for a period for every machine and the amount so estimated is divided by the total number of normal working hours of the machine during that period in order to calculate an hourly rate for fixed charges. For machine expenses, an hourly rate is calculated for each item of expenses separately by dividing the expenses by the normal working hours.
- (v) Total of standing charges and machine expenses rates will give the ordinary machine hour rate.

There are two ways of computing the machine hour rate. According to the first method, only indirect expenses directly or immediately connected with the operation of the machine are taken into account, e.g., power, depreciation, repairs and maintenance, insurance, etc. The rate is calculated by dividing the estimated total of these expenses for a period by the estimated number of operating hours of the machines during the period.

It will be obvious, however, that in addition to the expenses stated above there may still be other manufacturing expenses such as supervision charges, shop cleaning and lighting, consumable stores and shop supplies, shop general labour, rent and rates, etc., incurred for the department as a whole and, hence, not charged to any particular machine or group of machines. In order to see that such expenses are not left out of production costs, one should include a proportionate amount of such expenses, in the expenses of machines, before proceeding to compute the machine hour rate. Some people even prefer to add the wages paid to the machine operator in order to get a comprehensive rate for working a machine for one hour. But it is preferable to include the machine operator's wages in direct wages.

Generally, all expenses are not allocated to machines; it will be, therefore, necessary to calculate another rate for charging the general departmental expenses

to production. This second rate will be calculated on the basis of direct labour hours or wages. In effect, therefore, both the machine hour and the labour hour rates will be applied, though separately.

As regards the superiority of one method over the other, it may be considered that the recovery of the direct machine expenses without the proportion of the departmental expenses is likely to be more accurate than when these are made part thereof, because the general departmental expenses are not connected with the actual operation of the machines except remotely. Therefore, when merged with the direct machine expenses for the purpose of computing the machine hour rate, the resultant rate may not be as accurate or as it would be otherwise. But the second method has the advantage of simplifying the routine and procedure of applying manufacturing overheads in as much as only the machine hour rate has to be applied for charging the general departmental overhead.

#### *Advantages*

(1) Where machinery is the main factor in production, it is usually the best method of charging machine operating expenses to production.

(2) The under-absorption of machine overheads would indicate the extent the machines have been idle.

(3) It is particularly advantageous where one operator uses several machines (e.g., automatic screw manufacturing machines) or where several operators are engaged in one machine (e.g., the belt press used in making conveyor belts).

(4) It is a logical method and takes into consideration the time factor completely.

#### *Disadvantages*

(1) Additional data concerning the operating time of machines, not otherwise necessary, must be recorded and maintained.

(2) As general data concerning rates for all the machines in a department may be suitable, the computation of a separate machine hour rate for each machine or group of machines would mean additional work.

(3) It gives inaccurate result if hand labour is equally important.

If production is carried on in different departments having different degrees of mechanisation, the best method would be the machine hour rate. The machine may be treated as a small department or cost centre and the total cost for, say, a month may be divided by the effective hours for which the machine is usually used. Suppose the total cost of running a machine, including, expenses on rent, lighting, insurance, supervision, depreciation, power, etc. for a month is ₹12,600 and the total number of hours is 200 including 20 for maintenance, the machine hour rate is ₹70 i.e.  $\frac{12,600}{180}$ .

If the machine is used on job for 5 hours, the job should be charged with ₹350 i.e. ₹70 x 5 as production overheads.

[In small firms however, quite good results are obtained by working out the percentage of factory overheads to direct wages or by dividing the total factory

overheads by the total number of direct labour hours (productive labour hour rate); production overheads may then be charged to jobs or products using one of these methods. Office expenses are usually charged as a percentage of works cost].

#### Illustration 4

The following information has been collected from the cost records of a small company for the year ended 31<sup>st</sup> March:

	₹
Direct Materials	2,50,000
Direct Labour	2,00,000
Direct Expenses	20,000
Works Overheads	1,60,000
Office Expenses	94,500

The total number of direct labour hours were 1,00,000 involving 40,000 machine hours. What should be the price quoted for a job involving 2,000 labour hours @ ₹3 per hour, 1,000 machine hours and ₹10,000 in direct materials if the profit desired is 20% on the selling price?

#### Solution:

It should be realised that three methods for apportioning production overheads are possible in the problem. These are:

- (i) Percentage on Direct Wages: 80%, i.e.,  $\frac{1,60,000}{2,00,000} \times 100$
- (ii) Productive Labour Hour Rate: ₹1.60, i.e.  $1,60,000 \div 1,00,000$
- (iii) Machine Hours Rate: ₹4.00, i.e.  $1,60,000 \div 40,000$ .

The total work cost comes to ₹6,30,000; office expenses are ₹94,500. The percentage of office expenses to works cost is 15, i.e.,  $\frac{₹94,500}{₹6,30,000} \times 100$ .

#### Statement of Cost of Job No.....

	Percentage on Direct wages ₹	Productive Labour Hour rate ₹	Machine Hour rate ₹
Direct Materials	10,000	10,000	10,000
Direct Labour	<u>6,000</u>	<u>6,000</u>	<u>6,000</u>
Prime Cost	16,000	16,000	16,000

Works Overhead*	<u>4,800</u>	<u>3,200</u>	<u>4,000</u>
Works Cost	20,800	19,200	20,000
Office Expenses (15% of Works Cost)	<u>3,120</u>	<u>2,880</u>	<u>3,000</u>
	23,920	22,080	23,000
Profit (25% on cost, or at 20% on selling price)	<u>5,980</u>	<u>5,520</u>	<u>5,750</u>
Price	<u>29,900</u>	<u>27,600</u>	<u>28,750</u>

One should note that by using a different method a different figure is obtained.

### Illustration 5

Calculate the machine hour rate from the following:

	₹
Cost of machine	18,000
Cost of installation	2,000
Scrap value after 10 years	2,000
Rates and rent for a quarter for the shop	600
General lighting	200 p.m.
Shop supervisor's salary	₹6,000 per quarter
Insurance premium for a machine	120 p.a.
Estimated repair	200 p.a.
Power 2 units per hour @ ₹150 per 100 units	
Estimated working hours p.a. 2,000	

The machine occupies 1/4th of the total area of the shop. The supervisor is expected to devote 1/6th of his time for supervising the machine. General lighting expenses are to be apportioned on the basis of floor area.

### Solution:

#### Computation of Machine Hour Rate

Machine No.:

	<i>Per year</i>	<i>Per hour</i>
	₹	₹
<i>Standing Charges:</i>		
Rent and Rates - 1/4th	600	
General lighting as per floor area - (200x12)/4	600	
Supervisor's Salary (6,000x4)/6	4,000	
Insurance premium	<u>120</u>	
Total yearly standing charges	5,320	
Hourly rate 5,320 ÷ 2,000		2.66
<i>Machine Expenses:</i>		
Depreciation Cost	18,000	
Installation	<u>2,000</u>	

\* Respectively 80% of ₹6,000; ₹1.60 on 2,000 hours and ₹4.00 on 1,000 hours.

Total	20,000	
Less: Scrap value	<u>2,000</u>	
Amount to be written off	18,000	0.90
Repairs etc. — ₹ 200/2,000 hours		0.10
Power 2 units @ ₹1.5 per unit		<u>3.00</u>
Machine Hour Rate		<u>6.66</u>

### 10.6 Combined machine hour and direct labour hour rate

Where the work is done partly by machines and partly by manual labour, a combination of Machine Hour and Direct Labour Hour Method is used for the purpose of absorbing works expenses. Such expenses as are inseparable from the running of the machine, are allocated on the basis of the Machine Hour Rate and the other expenses which are not directly attached to the machines are allocated on the basis of the direct labour hour basis. In fact, because of inconvenience, it may not be possible to cover all the items included in factory overheads while computing machine hour and direct labour hour rates. For example, it is likely that such overhead items as salary of the works manager or the factory clerical staff, stationery, etc. are left out. To cover such items also there will be need to apply the method of the percentage of wages to overhead (remaining items only). Suppose the various rates worked out are the following:

Machine A	₹35 per hour
Machine B	₹45 per hour

Skilled workers:

Category 1	₹3.00 per hour
Category 2	₹2.50 per hour

The total wages (direct) for a month come to ₹1,50,000 and the items of overheads not covered while computing the rates mentioned above totalled ₹22,500 per month. For a job undertaken during the month, the following information is available:

Time spent: Machine A 10 hours  
Machine B 5 hours

Skilled workers:

Category 1 25 hours  
Category 2 20 hours

Total of direct wages ₹600

The overheads to be applied to the job will be ₹790 i.e.

Machine A	10 hours @ ₹35	₹ 350
Machine B	5 hours @ ₹45	225
Workers		
Category 1	25 hours @ ₹3.00	75

Category 2 20 hours @ ₹2.50	50
*"Remaining" overheads:	<u>90</u>
	<u>790</u>

### 10.7 Rate per unit of production

This is also known as unit cost method. Under this method, actual or pre-determined overhead rate is calculated by dividing the overheads to be absorbed by number of units produced or expected to be produced. The rate is calculated as under:

$$\text{Overhead rate} = \frac{\text{Overhead expenses}}{\text{No. of units produced}}$$

This method is very simple. The main limitation of this method is that it is restricted to those concerns which produce only one item of product or a few sizes, quantities or grades of the same product.

## 11. OVER OR UNDER ABSORPTION OF OVERHEADS

Overhead expenses are usually applied to production on the basis of predetermined rates. The predetermined rates may represent estimated, actual or normal costs. In either case, the amount of expenses actually incurred and the amount of overheads applied to production will seldom be the same. Some difference is inevitable. If the actual expenses fall short of the amount applied, there is said to be an over-absorption of overheads, and, conversely, if the actual expenses exceed the amount applied to production, it is a case of under-absorption. Such over or under-absorption may also be termed as overhead variance, the amount of over-absorption being represented by the credit balance on the variance account, and, conversely, the amount of under-absorption by a debit balance.

### *Treatment of under-absorption and over-absorption of overheads*

The treatment will depend on the causes that led to under or over-absorption. The amount ascribable to abnormal factors should be charged off to costing profit and loss account, otherwise costs previously arrived at should be adjusted. The following are the main methods of disposal of under or over-absorption of overheads.

#### 11.1 Use of supplementary rates

Where the amount of under or over-absorption is considerable, the cost of jobs or products is adjusted by means of a supplementary rate. This rate is determined by dividing the amount of under or overabsorption by the base that was adopted for absorption. This rate may be positive or negative. The amount of under-absorption is set right by a positive rate while a negative rate is determined for adjusting over-absorption. The amount of under/over-absorption at the end of accounting period is adjusted in work-in-progress, finished stock and cost of sales in proportion to direct labour hours, or machine hours or the value of the balances in each of these

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\* 15% on ₹600

accounts by use of supplementary rate. Subsidiary records or individual items are not corrected. The amount so adjusted will be shown in the balance sheet as deductions from the work-in-progress and finished stock.

### **11.2 Writing of to costing profit and loss account**

Where the difference between actual or absorbed overheads is not large, the simple method is to write it off to the costing profit and loss account. When there is under absorption due to idle facility, the concerned amount is also written off in this manner, likewise, when there was wasteful expenditure due to lack of control also.

### **11.3 Carrying of overheads**

The balance of under/over-absorbed overheads at the end of the year is transferred to an overhead reserve or suspense account and is carried forward to the next year account for absorption. This method is preferably applied when the normal business cycle is more than one year and in the case of new projects and schemes when the output is low in the initial stages of production and can not bear the entire share of overhead.

## **12. TREATMENT OF ADMINISTRATIVE OVERHEADS**

As a class, administrative expenses bear only a remote relationship either to the manufacturing or to the selling functions. The administrative divisions being responsible only for laying down general policies of the company, its benefits, by and large, are intangible and hence difficult to measure. Also, administrative expenses are generally period costs are constant; they are not affected by any fluctuations in the volume of production of sales activity. A careful watch over the variable administrative expenses, e.g., postage, stationery, office maintenance and upkeep, office transport, repairs, etc., is nevertheless necessary since top executives may sometimes overlook the need for exercising strict economy in expenses with which they themselves are concerned.

There are three distinct methods of accounting for administrative overheads.

### **12.1 Apportioning between production and sales departments**

This method recognises only two basic functions of a manufacturing concern, i.e. manufacturing and selling and distribution. Thus, administrative overheads are apportioned over production and sales departments. Therefore, each of the department should be charged with the proportionate share of them. When this method is adopted, administrative overheads lose their identity and get merged with production and selling and distribution overheads.

### **12.2 Transfer to profit and loss account**

As per this method, administrative overheads are concerned with the formulation of policies and thus are not directly concerned with either the production or the selling and distribution functions. Further administrative overheads are mainly of fixed costs. Lastly, there appears to be no equitable base to charge administration overheads to

other functions or the products. In view of these arguments, the administrative overheads are charged to profit and loss account.

### 12.3 Treating administrative overheads as a separate addition to the cost of jobs or products

This method considers administration as a separate function like production and sales and, as such costs relating to formulating the policy, directing the organisation and controlling the operations are taken as a separate charge to cost of the jobs or a product, sold along with the cost of other functions. The following bases may be adopted for such absorption:

- (i) Works cost
- (ii) Sales value/quantity
- (iii) Gross profit on sales
- (iv) Units manufactured
- (v) Conversion cost.

#### Illustration 6

The following information has been gathered for a company doing jobbing work only for 2010:

	₹
Materials Consumed	4,00,000
Direct Labour	3,00,000
Factory Overheads	2,40,000
Office and Administrative Expenses	94,000
Sales	12,40,800

The company has to quote for a job to be undertaken in February, 2011. It is estimated that the job will require materials costing ₹30,000 and direct wages for it will be ₹45,000. What should be the quotation?

#### Solution:

	₹
<i>Cost Sheet for 2010</i>	
Materials Consumed	4,00,000
Direct Labour	<u>3,00,000</u>
Prime Cost	7,00,000
Factory Overheads	<u>2,40,000</u>
Works Cost	9,40,000
Administration Expenses	<u>94,000</u>
Total Cost	10,34,000
Profit (Balancing Figure)	<u>2,06,800</u>
Sales	<u>12,40,800</u>

Some relevant percentages:

$$(i) \text{ Factory overheads to direct labour} = \frac{\text{₹}2,40,000}{\text{₹}3,00,000} \times 100 = 80\%$$

$$(ii) \text{ Administration Expenses to Works Cost} = \frac{\text{₹}94,000}{\text{₹}9,40,000} \times 100 = 10\%$$

$$(iii) \text{ Profit to total cost} = \frac{\text{₹}2,06,800}{\text{₹}10,34,000} \times 100 = 20\%$$

*Quotation for Job:*

Materials	₹ 30,000
Direct Wages	45,000
Prime Cost	75,000
Factory Overheads, 80% of ₹45,000	36,000
Works Cost	1,11,000
Administration Expenses 10% of ₹1,11,000	11,100
Total Cost	1,22,100
Profit @ 20% of total cost	24,420
Price (to be quoted)	1,46,520

### 13. TREATMENT OF SELLING AND DISTRIBUTION OVERHEADS

Selling costs or overhead expenses are those incurred for the purpose of promoting the marketing and sales of different products. Distribution expenses, on the other hand, are expenses relating to delivery and dispatch of goods sold. Examples of selling and of distribution expenses have been considered earlier in this Study Lesson. From the above, it is clear that the two types of expenses represent two distinct types of functions. However, it is usual to group together these into one composite class, namely, selling and distribution overhead, for the purpose of cost accounting. Such a course has the merit of simplicity.

*Absorption of selling and distribution expenses*

If selling and distribution expenses are small, they may be included in office expenses. If these expenses are considerable, one of the following magnitudes may be followed:

#### 13.1 Percentage of works cost

In this method, on the basis of past year's experience the percentage of selling expenses to works cost is ascertained and used for finding out the selling and distribution expenses to be charged to each job or product. This method can be

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followed successfully if one product is produced or where selling expenses are small though various articles are produced. The method will not take into consideration different efforts involved in selling unless the effort is in the same proportion as the cost of production.

### 13.2 A percentage on the selling price

From an analysis of past year's accounts one can determine the percentage which normal selling and distribution expenses bear to the normal turnover. Suppose, on the basis of the previous year's experience it is ascertained that selling expenses are 10% of the turnover, and the cost of production is 9,000, then  $\frac{10}{100 - 10}$  i.e.  $\frac{10}{90}$

or  $\frac{1}{9}$  of the cost of production will be charged as selling and distribution expenses.

This method can be followed in those cases, where the products are sold at fixed prices and the selling price of each article is known. If prices fluctuate, the method will not give good results.

### 13.3 An estimated rate per unit

If there is only one product, the total estimated selling expenses can be divided by the total estimated number of unit to be sold to give the selling on cost per unit. It would be better if constant and variable expenses are separately treated, if there are more than one product.

#### Illustration 7

In a certain department of a factory there are two shops. Total departmental overheads for a year are ₹1,20,000 and the estimated number of direct labour hour is 24,000 (10 men employed for 48 hours per week during 50 weeks in the year).

From the particulars given below calculate the prime cost and works cost of a work order No. 54 which passes through both shops:

- (1) Material consumed ₹1,000.
- (2) Direct labour hours : Shop A — 8 hours @ ₹6.00 per hr.  
Shop B — 5 hours @ ₹7.50 per hr.
- (3) Works overheads are to be levied by means of a direct hour rate.

#### Solution:

*Calculation of Direct Labour Hour Rate*

$$\text{Direct Labour Hour Rate} = \frac{\text{₹}1,20,000}{24,000} = \text{₹}5.00$$

*Statement of Cost of Work Order No. 54*

₹

₹

Material consumed		1,000.00
Direct Labour:		
Shop A (8 hours @ ₹6.00 per hour)	48.00	
Shop B (5 hours @ ₹7.50 per hour)	37.50	<u>85.50</u>
Prime Cost		1,085.50
Works Overheads:		
Shop A (8 hours @ ₹5.00 per hour)	40.00	
Shop B (5 hours @ ₹5.00 per hour)	25.00	<u>65.00</u>
Works Cost		<u>1,150.50</u>

**Illustration 8**

The following information is obtained from the records of a factory regarding the execution of two orders for the same quantity of a commodity:

	Materials	Wages	Sale Price	Percentage of Profit on Cost of Production %
	₹	₹	₹	%
First order	25,000	20,000	85,800	10
Second order	36,000	28,000	1,23,760	12

Find out the percentage of Factory Overheads and Office Overheads.

**Solution:**

The cost of production of the First Order = ₹78,000 being 100/110 of ₹85,800.

The cost of production of the Second Order = ₹1,10,500 being 100/112 of ₹1,23,760.

Let factory overhead be  $x\%$  on wages and office overhead be  $y\%$  on factory cost.

Then,

$$78,000 = 25,000 + 20,000 + \left(20,000 \frac{x}{100}\right) + \left[\frac{y}{100}(45,000 + 200x)\right]$$

$$1,10,500 = 36,000 + 28,000 + \left(28,000 \frac{x}{100}\right) + \left[\frac{y}{100}(64,000 + 280x)\right]$$

$$33,000 = 200x + 450y + 2xy \quad \dots(i)$$

$$46,500 = 280x + 640y + 2.8xy \quad \dots(ii)$$

Multiplying equation (i) by 28 and equation (ii) by 20, we get

$$9,24,000 = 5,600x + 12,600y + 56xy$$

$$9,30,000 = 5,600x + 12,800y + 56xy$$

$$\text{or } -6,000 = -200y$$

$$\text{or } y = 30$$

By substituting the value of y in equation (i), we get

$$33,000 = 200x + 13,500 + 60x$$

$$\text{or } x = 75.$$

Therefore, the factory overheads are 75% of wages and office overheads are 30% of factory cost.

### Illustration 9

Hind Private Ltd. manufactures four sizes of the product 'Modern Model' called A, B, C, and D in the Department. The workers are paid the piece rate of Re. 1.00, ₹1.50, ₹2.00, ₹3.00 per unit of the product sizes A, B, C and D respectively. Dearness allowance paid to the workers is ₹4.00 per day. Miscellaneous payments are 20% of the basic wages.

From the following information for the month of January, you are required to find the total cost per unit of each size of the product 'Modern Model':

	<i>Product</i>			
	<i>Size A</i>	<i>Size B</i>	<i>Size C</i>	<i>Size D</i>
Direct Labour (Days)	104	78	52	52
Production (Units)	320	150	70	55
Direct Material (₹)	250	150	100	125
Overhead Expenses:				
Indirect Material	₹ 500			
Indirect Labour	572			
Indirect Expenses	429			

### Solution:

#### Statement of total cost per unit of each size

	Products			Remarks
	A	B	C	
Units Produced	320	150	70	55
Direct Material (a)	0.78	1.00	1.43	2.27
Direct Labour:				
Piece rate wages	1.00	1.50	2.00	3.00
*Dearness allowance	1.30	2.08	2.97	3.78
Misc. payment	0.20	0.30	0.40	0.60
Total Direct Labour: (b)	2.50	3.88	5.37	7.38
Prime Cost (a+b)	3.28	4.88	6.80	9.65

Overhead Expenses:

Basis of

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Indirect Material	0.62	0.80	1.14	1.82	Apportionment Material Value
Indirect Labour	0.65	1.04	1.49	1.89	Direct Labour Days
Indirect Expenses	0.49	0.78	1.11	1.42	Direct Labour Days
Total Overhead (c)	<u>1.76</u>	<u>2.62</u>	<u>3.74</u>	<u>5.13</u>	
Total Cost (a+b+c)	<u>5.04</u>	<u>7.50</u>	<u>10.54</u>	<u>14.78</u>	

## 14. CONTROL OF OVERHEADS

### 14.1 Manufacturing Overheads

Control of manufacturing overhead cost can be best achieved by means of the flexible budget. It provides a base for comparing the actual overhead with the budgeted overhead adjusted to the level of activity attained. Fixed budgets may be used for planning purposes. No adjustment is made for actual level of activity attained. Flexible budgets may be prepared by the following two methods.

- Range of activity method of setting flexible budget.
- Fixed plus variable rate method of setting flexible budget.

An item wise budget of overhead expenses can be prepared quarterly or monthly to control overheads. The budget should be based on anticipated production capacity and the past expenses. The fixed and variable expenses should be segregated. The actual expenses should be ascertained and controlled.

If the budgets are prepared department wise, controlling cost and fixing responsibility is facilitated.

Departmental overhead cost reports should be designed to emphasise the items which can be controlled by the departmental managers and exclude those items which are non-controllable either directly or indirectly. Variances in non-controllable items is generally due to a poor system of cost allocation or due to decisions made by the management. Large non-controllable variances tend to obscure effectiveness of the departmental managers effort to control cost. Moreover, if there are large number of non-controllable items it make the report useless: Hence non-controllable items should be excluded.

Approved departures from budget should also be indicated in the performance reports and allowances for such approved departures should be introduced in variance analysis. In other words, "management by exception" should be applied for effective control of overhead cost.

#### *Difficulties in controlling overhead costs*

A certain amount of authority is usually delegated to lower level of management for controlling certain costs within their jurisdiction. However, the following difficulties

are faced while controlling overheads:

- (i) Few overheads are controllable when authority is delegated, as lower levels of management cannot control all expenses.
- (ii) Several causes are jointly controllable by different departments.
- (iii) Controllable costs vary with activity level. They tend to be fixed or semi-fixed and indirect with respect to either the product or departments and non-controllable by lower levels of management.
- (iv) The decisions made do not alter the amount of fixed costs as they are long-term costs.

The following steps should be taken to control manufacturing overheads:

- (a) Overheads should be properly classified as fixed, variable and semi-fixed.
- (b) The overhead cost should be budgeted by each classification and each department.
- (c) Actuals and budgeted figures should be compared and necessary action initiated.
- (d) Standard costing system should be introduced.

#### 14.2 Control of Administration Overheads

A major portion of administrative overhead costs is fixed in nature and are incurred due to management policy. Administration overhead can be classified to two parts, namely, the expenses that varies with volume of office work and fixed expenses. Fixed overheads e.g. depreciation cannot be controlled at lower levels of management and can be incorporated in a fixed cost budget for informing the top management.

They are usually non-controllable. Though it is difficult to control such costs, the following methods can be used to control administration overheads :

- (a) Preparing control reports and comparing the results with the past.
- (b) *Flexible Budget*: Budgets are fixed for each items of administration overhead so that periodical comparisons can be made and responsibility can be fixed and to ensure that the actuals do not exceed the budgets.
- (c) *Standard Cost Accounting*: The most important problem connected with the administrative overhead cost is its costing treatment rather than its control because a major portion of the overhead is not controllable.

#### 14.3 Control of selling and distribution overheads

It is not easy to identify or link selling and distribution costs with units of production because the costs are normally incurred after production has been completed.

The incidence of these costs depends upon several factors such as the distance of market, terms of sale, extent of competition etc.

It is difficult to control such cost because of the following reasons:

- (a) capacity of sales organisation cannot be properly defined,

- (b) it is difficult to exercise control over customers and competitors,
- (c) strict control cannot be exercised by sales representatives and other field workers,
- (d) price fluctuations are determined by many factors besides cost factors,
- (e) market potentials and capacity cannot be properly estimated,
- (f) the difference between selling and not selling is sometimes not clear.

Such cost can be controlled and reduced by the following :

- (i) preparing selling and distribution control reports and cost control reports.
- (ii) *preparing flexible budgets*: The budget should be drafted keeping in mind the potential and anticipated sales of each product in every region. Many of the selling and distribution expenses can be budgeted on this basis. Top management estimates and plans certain expenses like advertisement, credit facilities, sales promotion etc. which cannot be directly linked with sales. Periodical statements can be prepared. Actuals should be compared with budgeted figures and any variations should be corrected.
- (iii) standard costing.
- (iv) *comparison with past performance*: The expenses incurred in a period can be compared with the corresponding expenditure incurred earlier. Difference in amounts and percentages to sales can be verified and corrective action initiated.

#### LESSON ROUND UP

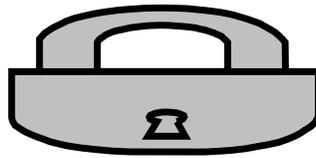


- Direct expenses are costs other than materials or wages which are incurred for a specific product or saleable service.
- Overhead is the expenditure on labour, materials or services which can not be economically identified with a specific saleable cost unit.
- Standing order number is a code number given to a factory overhead item.
- Allocation of overheads is the process of charging the full amount of overhead costs to a particular cost centre.
- Apportionment of overheads refers to the allotment of proportions of items of cost to cost centers or cost units.
- Primary distribution of overhead involves allocation or apportionment of different items of overhead to all departments of a factory. This is also known as departmentalization of overheads.
- Secondary distribution of overheads is the process of apportionment of service department overheads among the production departments.
- Absorption of overheads refers to allotment of overheads to cost units.
- Pre-determined overhead rate is the rate calculated by dividing the budgeted

overheads for an accounting period by the budgeted base for the period.

- Machine hour rate is the overhead cost for operating the machine for one hour.
- Unabsorbed overheads means the amount by which the overhead actually incurred exceeds the overhead absorbed by the application of a predetermined rate.

### SELF TEST QUESTIONS



1. State the distinction between the two terms in each of the following, giving examples:
  - (a) Cost allocation and cost apportionment.
  - (b) Direct cost and indirect cost.
  - (c) Fixed cost and variable cost.
  - (d) Indirect expenses and overheads.
2. Distinguish clearly between direct and indirect materials. Under what circumstances may direct materials be charged indirectly to the product ?
3. Distinguish between direct labour and indirect labour. Give four examples of indirect labour that may arise in a factory.
4. Is it necessary to classify costs as "fixed" and "variable" ? Describe briefly how this classification would be of help in costing ?
5. Describe the different components of total cost.
6. What are overheads ? How should overheads be classified ? To what extent will you include overhead charges in your valuation of (a) work-in-progress, and (b) finished goods?
7. Distinguish between allocation, apportionment and absorption in connection with factory overhead expenses.
8. Discuss the reasons for overheads being analysed into fixed and variable components.
9. What are different stages by which overhead expenses are analysed, collected and charged to product ?
10. State the main sources from which overhead expenses are collected in the Cost Accounts.
11. What are the general considerations that should decide your choice of basis for distribution of overhead costs to departments ?
12. What is meant by absorption of overheads ? What factors should be considered in obtaining a rate for absorption of overheads ?
13. What are meant by 'actual overheads' and 'recovered overheads'? Under what circumstances overheads stand under-absorbed or over absorbed ? How will you account for the under/over absorption of overheads ?
14. Works overhead expenditure is frequently charged out as a percentage on

direct labour. Give two specific examples (with figures) where this method yields misleading results.

15. What are the principal factors to be considered when fixing a machine hour rate ? Give a specimen computation.
16. In a factory where machine hour rates are used for recovering overhead expenses, state what information would be necessary to compute these rates?
17. Some of the major problems of cost accounting are associated with the allocation of indirect expenditure. Why is this so ? Give a brief account of the several methods of allocation known to you and indicate the circumstances which would lead you to regard each of them in turn as appropriate.
18. A company is having three production departments X, Y and Z and two service departments - boiler-house and pump-room. The boiler-house has to depend upon the pump-room for supply of water and pump-room in its turn is dependent on the boiler-house for supply of steam-power for driving the pump. The expenses incurred by the production departments are: X - ₹6,00,000; Y - ₹5,25,000; and Z - ₹3,75,000. The expenses for boiler-house are ₹1,75,500 and pump-room are ₹2,25,000.

The expenses of the boiler-house and pump-room are apportioned to the production departments on following basis:

	DEPARTMENT			Boiler House	Pump Room
	X	Y	Z		
Expenses of boiler-house	20%	40%	30%	—	10%
Expenses of pump-room	40%	20%	20%	20%	—

Show clearly as to how the expenses of boiler-house and pump-room would be apportioned to X, Y and Z departments?

19. The budgeted working conditions of a cost centre are as follows:

Normal working per week	42 hours
No. of machines	14
Normal weekly loss of hours on maintenance etc.	5 hours per machine
No. of weeks worked per year	48
Estimated annual overheads	₹2,48,640
Estimated direct wage rate	₹ 8 per hour

Actual results in respect of a week period are:

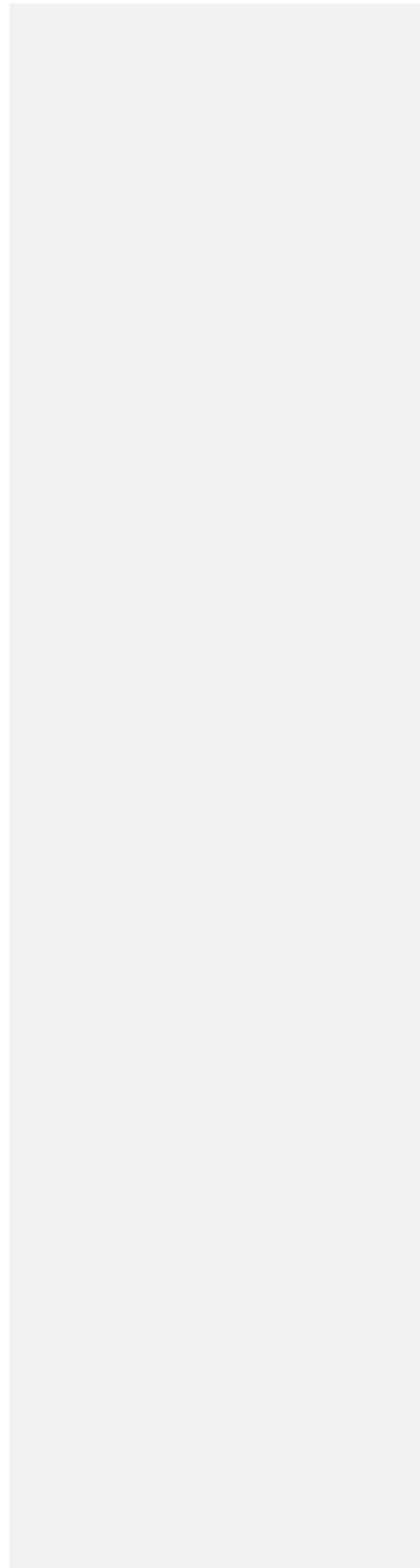
Wages incurred	₹18,000
Overheads incurred	₹20,400
Machine hours produced	2,000

You are required to calculate:

- (i) The overhead rate per machine hour; and  
 (ii) The amount of under or overabsorption of wages and overheads.

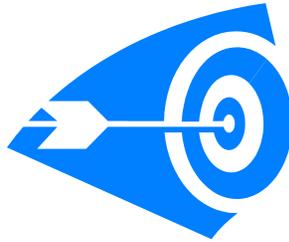
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STUDY XII  
**METHODS OF COSTING**

**LEARNING OBJECTIVES**



To understand the concepts of unit costing and contract costing

- Prepare cost sheet and production account
- Distinguish between cost sheet and production account
- Familiarize with specific aspects of contract costing
- Prepare contract account.
- Understand the treatment of profit on incomplete contracts.

### **1. SINGLE/OUTPUT/UNIT COSTING**

Unit costing refers to the costing procedure, under which costs are accumulated and analyzed under different elements of cost and then cost per unit is ascertained by dividing the total cost by number of units produced. It is ideally used in case of concerns producing a single article on large scale by continuous manufacture. The units of output are identical. The products are homogenous. Concern using single or output costing produces basically one product or two or more grades of one product.

It is not necessary to maintain separate cost accounts under this system. as all the information required can be obtained only by organizing and analyzing the financial accounts. On dividing the total expenditure incurred by the number of units produced, the cost per unit is ascertained.

This system of costing is suitable for breweries, collieries, cement works, steel, brick making, floor mills etc. In all these cases the unit cost of the article produced requires to be ascertained.

The information on expenditure incurred on material, labour and direct expenses can be available without any special difficulty. The works and administration expenses actually incurred also are included in the total cost. Items of indirect expenses which are paid at periodical intervals are included in cost accounts on the basis of estimates. Selling and distributing expenses are not included in cost sheets since these have no connection with the quantity produced, If, however, it is decided to include them, the same also are estimated on the basis of past experience.

## 2. COST SHEET

Cost sheet is a document which provides for the assembly of the detailed cost of a cost centre or cost unit. It is a periodical statement of cost designed to show in detail the various components of cost of goods produced like prime cost, factory cost, cost of production, total cost and cost per unit. A specimen of a simple cost sheet is given below:

### Cost Sheet (or Statement of Cost) for the period.....

*No. of units produced.....*

Particulars	Total cost	Cost per unit
	₹	₹
Direct Materials		
Direct Labour		
Direct (or Chargeable) Expenses*		
Prime cost		
Add: Works Overheads		
Works Cost		
Add: Administrative Overheads		
Cost of Production		
Add: Selling and Distribution Overheads		
Total Cost or Cost of Sales		

If possible the cost sheet should have columns for (i) total cost; (ii) percentage to total cost; (iii) cost per unit; and (iv) corresponding figures of the previous period and clear figures for each element of cost.

#### *Treatment of stock:*

Stock requires special treatment while preparing a cost sheet. Stock may be of raw materials, work-in-progress and finished goods.

#### *Stock of Raw Materials:*

If opening stock of raw material, purchase of raw materials and closing stock of raw materials are given, then, raw material consumed can be calculated as follows:

Opening stock of raw materials	—
Add: Purchase of raw materials	—
Less: Closing stock of raw materials	—
Value of raw materials consumed	—

\* The terms "direct expenses" have been excluded from prime cost as per CIMA terminology i.e. according to CIMA, prime cost is "the total cost of direct material and direct labour".

*Stock of Work-in-Progress:*

Work-in-progress is valued at prime cost or works cost basis, but latter is preferred. If it is valued at works or factory cost then opening and closing stock will be adjusted as follows :

Prime cost	—
<i>Add:</i> Factory overheads	—
Work-in-progress (beginning)	—
<i>Less:</i> Work-in-progress (closing)	—
Works cost	—

*Stock of Finished Goods*

If opening and closing stock of finished goods are given, then these must be adjusted before calculating cost of goods sold:

Cost of production	—
<i>Add:</i> Opening stock of finished goods	—
<i>Less:</i> Closing stock of finished goods	—
Cost of goods sold	—

*Uses of Cost Sheet:*

- (i) It gives total cost and cost per unit for a particular period.
- (ii) It gives information to management for cost control.
- (iii) It provides comparative study of actual current costs with the cost of corresponding periods, thus causes of inefficiencies and wastage can be known and suitably corrected by management.
- (iv) It acts as a guide to manufacture in formulation of suitable and definite policies and in fixing up the selling price.

*Items excluded from cost sheet*

The following items are of financial nature and thus not included while preparing a cost sheet.

- (i) Cash discount
- (ii) Interest paid
- (iii) Preliminary expenses written off
- (iv) Goodwill written off
- (v) Provision for taxation
- (vi) Provision for bad debts
- (vii) Transfer to reserves
- (viii) Donations

- (ix) Income tax paid
- (x) Dividend paid
- (xi) Profit/loss on sale of assets
- (xii) Damages payable at law etc.

### 3. PRODUCTION ACCOUNT

If the details of cost sheet or production statement are shown in the form of a ledger account, it is known as production account. Besides cost of production it also includes selling and distribution expenses. It is prepared in three parts - the first part gives the cost of production, the second part gives the cost of goods sold and the third part shows cost of sales or total cost for the period. A specimen of a Production Account is as follows:

#### PRODUCTION ACCOUNT

<i>Particulars</i>	<i>Amount</i>	<i>Particulars</i>	<i>Amount</i>
To Direct materials	...	By Cost of Production c/d	...
— Direct labour	...		
Prime Cost	<u>...</u>		
— Works overheads	...		
— Work in progress (Opening)	...		
Less: Work in progress (closing)	...		
Less: Sale of by-products or scrap	<u>...</u>		
Works Cost	...		
— Administration overheads	<u>...</u>		
To Cost of Production b/d	...	By Closing stock of finished goods	...
— Opening stock of finished goods	<u>...</u>	By Cost of Goods Sold c/d	...
To Cost of Goods Sold b/d	...	By Cost of Sales	...
— Selling and distribution overheads	...		
To Cost of Sales	<u>...</u>	By Sales	...
To Profit	...		
	<u>...</u>		<u>...</u>

#### *Cost Sheet and Production Account*

The following are the points of distinction between cost sheet and production account:

<i>Cost sheet</i>	<i>Production Account</i>
(1) It is prepared as a statement.	It is prepared as an account.
(2) Expenses are classified to ascertain prime cost, factory cost, total cost, etc.	Expenses are not classified.
(3) To enable comparison, figures of previous period are provided.	No figures of previous period are provided. Hence no comparison is possible.
(4) It is based on actual and estimated figures of expenses.	It is based on actual figures.
(5) It is prepared for each job and sometimes for the whole factory.	It is prepared for each production department.

### Illustration 1

The following particulars have been extracted from the books of a manufacturing company for the month of March, 2011:

	₹
Stock of materials as on 1st March, 2011	47,000
Stock of materials as on 31st March, 2011	50,000
Materials purchased during the month	2,08,000
Drawing office salaries	9,600
Counting house salaries	14,000
Carriage on purchases	8,200
Carriage on sales	5,100
Cash discount allowed	3,400
Bad debts written off	4,700
Repairs of plant, machinery and tools	10,600
Rent, rates, taxes and insurance (factory)	3,000
Rent, rates, taxes and insurance (office)	1,000
Travelling expenses	3,100
Travellers' salaries and commission	8,400
Productive wages	1,40,000
Depreciation written off on plant, machinery and tools	7,100
Depreciation written off on office furniture	600
Directors' fees	6,000
Gas and water charges (factory)	1,500
Gas and water charges (office)	300
General charges	5,000
Manager's salary	12,000

Out of 48 working hours in a week, the time devoted by the Manager to the factory and office was on an average 40 hours and 8 hours respectively throughout the month. 1,00,000 units were produced and sold; there was no opening or closing stock of it.

Prepare a cost sheet showing the following:

- (i) Cost of Materials Consumed;
- (ii) Prime Cost;
- (iii) Works Overhead;
- (iv) Works Cost;
- (v) Office and Administration Overhead;
- (vi) Cost of Production;
- (vii) Selling and Distribution Overhead; and
- (viii) Total Cost or Cost Sales.

**Solution**

**Cost Sheet of..... Manufacturing Co.  
For the month of March, 2011**

<i>Particulars</i>	<i>₹</i>	<i>₹</i>	<i>Total cost</i>	<i>% to total cost</i>	<i>Cost per unit</i>
	<i>₹</i>	<i>₹</i>	<i>₹</i>		<i>₹</i>
Stock of materials as on 1st March, 2011		47,000			
Add: Purchase of materials	2,08,000				
Carriage on purchases	<u>8,200</u>	<u>2,16,200</u>			
Total material available for consumption		2,63,200			
Less: Stock of Materials as on 31st March, 2011		<u>50,000</u>	2,13,200	47.89	2.132
Direct labour or productive wages			<u>1,40,000</u>	<u>31.45</u>	<u>1.400</u>
Prime Cost			3,53,200	79.34	3.532
Add: Works Overheads:					
Drawing office salaries		9,600			
Repairs of plant, machinery and tools		10,600			
Rent, rates, taxes and insurance (factory)		3,000			
Depreciation on plant machinery and tools		7,100			
Gas and water charges (factory)		1,500			
Manager's salary $\left(\frac{40}{48} \times 12,000\right)$		<u>10,000</u>	<u>41,800</u>	<u>9.39</u>	<u>0.418</u>
Works Cost or Factory Cost			3,95,000	88.73	3.950
Add: Office and Administrative Overheads:					
Counting house salaries		14,000			
Rent, rates, taxes and insurance (office)		1,000			
Depreciation on office furniture		600			
Directors' fees		6,000			
Gas and water charges (office)		300			

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General charges	5,000			
Manager's salary $\left(\frac{8}{48} \times 12,000\right)$	<u>2,000</u>	<u>28,900</u>	<u>6.49</u>	<u>0.289</u>
Cost of Production		4,23,900	95.22	4.239
<i>Add: Selling and Distribution Overheads:</i>				
Carriage on sales	5,100			
Bad debts written off	4,700			
Travelling expenses	3,100			
Traveller's salaries and commission	8,400	<u>21,300</u>	<u>4.78</u>	<u>0.213</u>
Total Cost or Cost of Sales		<u>4,45,200</u>	<u>100.00</u>	<u>4.452</u>

**Note:** Cash discount allowed is a matter of pure finance and hence it is excluded from costs.

### Illustration 2

The following information has been obtained from the records of ABC Co. Ltd. for the month of January, 2011:

	₹
Cost of raw materials on 1/01/2011	30,000
Purchase of raw materials during the month	4,50,000
Wages paid	2,30,000
Factory overheads	92,000
Cost of work-in-progress on 1/01/2011	12,000
Cost of raw materials on 30 /01/2011	25,000
Cost of work-in-progress on 30 /01/2011	15,000
Cost of stock of finished goods on 1 /01/2011	60,000
Cost of stock of finished goods on 30 /01/2011	55,000
Administration overheads	30,000
Selling and distribution overheads	20,000
Sales	9,00,000

Prepare: (i) Cost sheet showing the cost of production of goods manufactured, and (ii) Statement showing the cost of sales and the profit earned.

### Solution:

#### Cost Sheet of ABC Ltd. for the month of January, 2011

	₹	₹
Direct materials consumed:		
Cost of raw materials on 1/01/2011	30,000	
<i>Add: Purchases of raw-materials during the month</i>	<u>4,50,000</u>	
	4,80,000	
<i>Less: Cost of raw-materials on 30/01/2011</i>	<u>25,000</u>	4,55,000

Direct Labour - wages paid	<u>2,30,000</u>
Prime Cost	6,85,000
Factory overheads	<u>92,000</u>
	7,77,000
<i>Add: Cost of work-in-progress on 1/01/2011</i>	<u>12,000</u>
	7,89,000
<i>Less: Cost of work-in-progress on 30/01/2011</i>	<u>15,000</u>
Works Cost or Factory Cost	7,74,000
Administration overheads	<u>30,000</u>
Cost of Production of Goods Manufactured	<u>8,04,000</u>

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**Statement showing the Cost of Sales and  
Profit for the month of January, 2011**

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	₹
Cost of Stock of finished Goods on 1/01/2011	60,000
<i>Add: Cost of goods manufactured during the month</i>	<u>8,04,000</u>
Cost of total goods available for sale	8,64,000
<i>Less: Cost of stock of finished goods on 30/01/2011</i>	<u>55,000</u>
Cost of Goods Sold	8,09,000
<i>Add: Selling and distribution overhead</i>	<u>20,000</u>
Total Cost or Cost of Sales	8,29,000
Sales Price	<u>9,00,000</u>
Profit during the month	<u>71,000</u>

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**Notes:**

- (1) Costs of opening and closing stock of work-in-progress have to be adjusted after the Factory overhead is added to the Prime Cost but before the Works cost is arrived at since Factory overhead expenses are also incurred on work-in-progress.
- (2) Selling and distribution overhead expenses can be incurred only on the goods sold, but not on the goods lying in stock.

**4. CONTRACT COSTING**

Contract (or terminal) costing, is one form of application of the principles of job order costing. In contract costing each contract is treated as a cost unit and costs are ascertained separately for each contract. It is suitable for business concerned with building or engineering projects or structural or construction contracts.

Contract jobs, while they resemble jobs, have a few distinctive features:

- (i) Under job costing, the cost is first allocated to cost centres and then to individual jobs. In contract costing, most of the expenses are of direct nature, overhead forms only a small percentage of total expenditure and it represents expenses like share of head office expenses, share of central storage cost etc.

- (ii) Under job costing pricing is influenced by individual conditions and general policy of the organisation. Under contract costing, pricing is influenced by specific clauses of the contract.
- (iii) Unlike job costing, each contract is a cost unit in contract costing.
- (iv) Under contract costing, the work is usually carried out at a site other than contractee's own premises. Job costing is often applied where jobs are carried out at the contractee's own premises.

Usually, there is a separate account for each contract. Also the number of contracts undertaken at a time, generally, not being very large, the Contract Ledger can very well be operated as part of the financial books. The contract account is debited with all direct and indirect expenditure incurred in relation to the contract. It is credited with the amount of contract price on completion of the contract. The balance represents profit or loss made on the contract and is transferred to the profit and loss account. In case, the contract is not completed at the end of the accounting period, a reasonable amount of profit, out of the total profit made so far on the incomplete contract, may be transferred to profit and loss account.

## 5. SPECIFIC ASPECTS OF CONTRACT COSTING

The recording procedure of the following items may be noted carefully:

(1) *Material*: Materials may be purchased in bulk and kept in store for supply to the contract, as and when required, or these may be purchased and directly supplied to the contract. In the latter case, the cost of material would be debited directly to the contract. If any materials are transferred from one contract to another, their costs would be adjusted on the basis of Material Transfer Note, signed both by the transferor and transferee foreman. In case certain materials charged to contract are returned to stores, the same will be credited to the contract account. Materials stolen or destroyed by fire will be transferred to profit and loss account. Materials in hand at the end of the year will appear on the credit side of the contract account.

(2) *Labour*: All labour actually employed on the site is regarded as direct labour irrespective of the nature of the task performed by the labour concerned. If it is desired to ascertain the labour cost for a particular job or work, each person would be provided with a job card upon which he must record the nature of the work performed by him. On the basis of the analysis of the job cards, labour analysis sheets are prepared for ascertaining the actual cost of labour on different operations.

If concurrently number of contracts are carried on and workmen are made to divide their time between two or more contracts, it would be necessary to prepare analysis sheets of labour, for charging to each contract, wages appropriate thereto.

(3) *Direct expenses*: The expenses which can be directly charged to different contracts will be posted directly to the respective contracts. These include cost of special tools, cost of design, electric charge, insurance etc.

(4) *Plant*: The value of plant used on a contract may be either debited to the contract and the written down value thereof at the end of the year entered on the credit side for closing the contract account, or only a charge for use of the plant (depreciation) may be debited to the account.

(5) *Overhead expenses*: In contract, overhead expenses are few and relate only to works or administration expenses which cannot be directly apportioned to individual contracts. These indirect expenses may be distributed on several contracts as a percentage of cost of materials or wages paid or the prime cost. If, however, the contracts are big, the labour hour method is often adopted for distribution of expenses since it is more efficacious. In making the distribution, the location of the site of the contract is another important factor to be considered, for contracts situated at a distance are not likely to receive the same supervision as compared to those which are close. Where such factors are prominent, some sort of quota basis for distribution of expenses may be followed.

(6) *Extras*: Where some additional work not stipulated in the contract is carried out, the expenditure on this additional work should be separately analysed from that charged to the main contract.

If the additional work is quite substantial, it should be treated as a separate contract and a separate account should be opened for it. If it is not very substantial, expenses incurred up on extra work should appear on the debit side of the contract account as cost of extra work, and the extra amount which the contractee has agreed to pay should be added to the contract price.

(7) *Sub-contracts*: Generally work of a specialised character e.g. the installation of lifts, special flooring etc. is entrusted to other contractors by the main contractor. The cost of such sub-contracts is a direct charge against the contract for which the work has been done.

(8) *Escalation clause*: Escalation clause is usually provided in the contract as a safeguard against any likely changes in the price or utilisation of material and/labour. This clause provides that in case prices of items of raw materials, labour etc. specified in the contract change during the execution of the contract, beyond a specified limit over the prices prevailing at the time of signing the agreement, the contract price will be suitably adjusted. The terms of the contract specify the procedure for calculating such adjustment in order to avoid all future disputes. Thus this clause safeguards the interest of both the contractor and the contractee in case of fluctuations in the prices of material, labour etc.

(9) *Cost plus contract*: Cost plus contract is a contract in which the value of the contract is ascertained by adding a certain percentage of profit over the total cost of the work. This is used in case of those contracts whose exact cost cannot be correctly estimated at the time of undertaking a work. The profit to be paid to the contractor may be a fixed amount or it may be a particular percentage of cost or capital employed. These type of contracts are undertaken for production of special articles not usually manufactured and is generally employed, when Government happens to be a contractee. Generally, in such contract, contractor and contractee have clear agreement about the items of cost to be included, type of material to be used, labour rates for different grades, normal wastages to be permitted and the rate or amount of profit.

*Advantage of cost plus contract*

- (i) Cost plus contract ensures that a reasonable profit accrues to the contractor even in risky projects.

- (ii) It simplifies the work offering tenders and quotations.
- (iii) It provides escalation clauses and thus covers the contractor from fluctuations in price and utilisation of elements of production.
- (iv) The customer is assured of paying only reasonable amount of profit.
- (v) The customer has the right to conduct cost audit so that he can ensure that he is not being cheated by the contractor.

In spite of the advantages mentioned above cost plus contract system has the following disadvantages:

- (i) Since the contractor is assured of profit margin, he may not take initiative for cost reduction by affecting economies of production and reducing wastages.
- (ii) The ultimate price to be paid by the customer cannot be exactly ascertained until the work is completed and this creates delay in preparing purchase budget by the customer.
- (iii) The customer has to pay not only the resultant high cost but also the resultant high profit. Thus, customer have to pay substantially for lack of proper attitude (towards cost and efficiency) on the part of contractor.

(10) *Surveyor's or Architect's certificate:* When a contractor is engaged on a contract for several years, he cannot afford to block a large amount of funds until the completion of the contract. Therefore, in case of large contracts the system of progress payment is adopted. The contractee agrees to pay a part of the contract price from time to time depending upon satisfactory progress of the work. The progress will be judged by the contractee's architect, surveyor or engineer who will issue a certificate stating the value of work so far done and approved by him. Such work is termed as work certified. The terms of the contract provide that whole of the amount shown by the certificate shall not be paid immediately but a percentage thereof shall be retained by the contractee until some time after the contract is completed. The sum retained is called retention money. Usually the contractor may be paid 75% or 80% of the work certified depending upon the terms of the contract. The object of this retention is to place the contractee in a favourable position in case the contractor does not fulfil some of the conditions laid down by the contract or in case of faulty work.

It may quite possible that at the end of a period a part of the work done may remain unapproved because it has not reached a stipulated stage. Such work which has not been so far approved by the contractee's architect or surveyor is termed as work uncertified. The full value of the work certified should be credited to the contract account and debited to the account of the contractee. Whenever any amount is received from the contractee cash account is debited and contractee's account is credited. Until the contract is completed, amount received from the contractee shows advance payments and is deducted from work in progress in the balance sheet. When the contract is completed, contractee's account is debited with the contract price and the contract account is credited.

(11) *Profit on incomplete contracts:* At the end of an accounting period it may be found that certain contracts which have been completed while others are still in process and will be completed in the coming years. The profit on completed contracts

may be safely taken to the credit of the profit and loss account. In the case of incompleting contracts there are unforeseen contingencies which may lead to heavy fluctuations in costs and profit. At the same time it does not also seem desirable to consider the profits only on completed contracts and ignore completely incomplete ones as this may result in heavy fluctuations in the future for profit from year to year. If profit or loss is not shown in the intermittent years for the work in progress, contract will show high figure of profit in the year of completion and reverse may be the case in the year in which a large number of contracts remain incomplete. Therefore, profits on incomplete contracts should be considered, of course, after providing adequate sums for meeting unknown contingencies. There are no hard and fast rule regarding calculation of the figures for profit to be taken to the credit of profit and loss account. However, the following rules may be followed:

- (i) Profit should be considered in respect of work certified only, work uncertified should always be valued at cost.
- (ii) No profit should be taken into consideration if the amount of work certified is less than 1/4th of the contract price because in such a case it is not possible to foresee the future clearly.
- (iii) If the amount of work certified is 1/4th or more but less than 1/2 of the contract price, 1/3rd of the profit disclosed as reduced by the percentage of cash received from the contractee, should be taken to the profit and loss account. The balance be allowed to remain as a reserve.
- (iv) If the amount of work certified is 1/2 or more of the contract price, 2/3rd of the profit disclosed, as reduced by the percentage of cash received from the contractee, should be taken to the profit and loss account. The balance should be treated as reserve.
- (v) In case the contract is very much near to completion, if possible the total cost of completing the contract should be estimated. The estimated total profit on the contract then can be calculated by deducting the estimated cost from the contract price. The profit and loss account should be credited with that proportion of total estimated profit on cash basis, which the work certified bears to the total contract price.
- (vi) The whole of loss, if any, should be transferred to the profit and loss account.

That part of the profit which is not credited to the profit and loss account is treated as a reserve against contingencies and is deducted from the amount of work-in-progress for balance sheet purpose. It is carried down as a credit balance in the contract account itself, the work-in-progress being represented by the debit balance in the contract account.



For Example: If the total profit on a contract for ₹3,00,000 is ₹60,000 and the contract is 60% complete and has been certified accordingly. The retention money is 20% of the certified value, then the amount of profit that can be prudently credited to Profit and Loss Account may be calculated as follows :

(1) Apparent profit

₹60,000

- (2) 2/3rd of this is ordinarily suitable for transfer to Profit and Loss Account  
(Since the Work certified is more than 50%) ₹40,000
- (3) The percentage of cash received to certified value 80%
- (4) The amount of profit determined on cash basis being suitable for transfer to Profit and Loss Account  
(80% of ₹40,000) ₹32,000

OR

Alternatively the profit to be transferred to the Profit and Loss Account can be:

$$\begin{aligned} & ₹60,000 \times \frac{80}{100} \times \frac{1,80,000}{3,00,000} \\ & = ₹28,800 \end{aligned}$$

(12) *Work-in-Progress*: In contract accounts, the value of work-in-progress includes the amount of work certified and the amount of work uncertified. The work-in-progress account will appear in the assets side of the balance sheet. The amount of cash received from the contractee and reserve for contingencies will be deducted out of this amount.

The work-in-progress account can be presented in balance sheet as follows:

**Balance sheet as on.....**

<i>Assets</i>	<i>Amount</i>
Work-in-progress	
Balance in contractee's Account	
Add: Work uncertified	
Less: Reserve for unrealised profit	

*Alternatively :*

**Balance sheet as on.....**

<i>Assets</i>	<i>Amount</i>
Work-in-Progress:	
Value of work certified	
Cost of work uncertified	
Less: Reserve for unrealised profit	
Less: Amount received from the contractee	

If the expenditure on incompletd contracts includes the value of plant and materials, these items may be shown separately in the balance sheet. Thus, instead

of showing the total expenditure under the heading of work-in-progress, expenditure may split up and shown separately in the balance sheet, under the headings of plant at site, material at site, and work-in-progress.

### Illustration 9

The following balances were extracted from the books of a building contract on 31st March, 2011 regarding Contract No. 123:

	₹
Materials issued to site	6,27,200
Wages Paid	7,34,550
Wages outstanding on 31.3.2011	7,200
Plant issued to site	60,000
Direct charges paid	25,150
Direct charges outstanding on 31.3.2011	2,100
Establishment charges	56,500
Stock of materials at site on 31.3.2011	12,000
Value of work certified on 31.3.2011	16,50,000
Cost of work not yet certified	35,000
Cash received on account of architect's certificate after deduction by customer of 5 percent retention money	14,10,750

The work was commenced on April 1, 2010 and the contract price agreed at ₹24,50,000.

Prepare contract account for the year providing for depreciation of plant of 25 per cent. Calculate the Profit or Loss in the contract to date and make such provision in the contract account as you consider desirable. Set out also contractor's balance sheet so far as it relates to the contract.

### Solution:

<b>Contract Account</b>			
<i>Dr.</i>			<i>Cr.</i>
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Materials to site	6,27,200	By Stock of material at site	12,000
To Wages paid	7,34,550	By Work-in-Progress:	
To Wages outstanding	7,200	Work certified	16,50,000
To Direct charges	25,150	Work uncertified	35,000
To Direct charges outstanding	2,100		
To Establishment charges	56,500		
To Depreciation-Plant	15,000		
To National Profit c/d	<u>2,29,300</u>		
	<u>16,97,000</u>		<u>16,97,000</u>

To Profit and Loss A/c	1,30,700	By Notional Profit	2,29,300
	$\left[ 2,29,300 \times \frac{2}{3} \times \frac{85.5}{100} \right]$		
To Work-in-Progress-Reserve	<u>98,600</u>		
	<u>2,29,300</u>		<u>2,29,300</u>

**Balance Sheet as on 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Wages outstanding	7,200	Stocks of material at site	12,000
Direct charges outstanding	2,100	Plant at site	45,000
P&L A/c: Profit transferred from Contract A/c	1,30,700	Work-in-Progress:	
		Work certified	16,50,000
		Work uncertified	<u>35,000</u>
			16,85,000
		Less: Reserve	<u>98,600</u>
			15,86,400
		Less: Cash received	<u>14,10,750</u>
			<u>1,75,650</u>

**Illustration 10**

Three Contracts A, B and C, commenced on 1st January, 1st July and 1st October, 2010 respectively, were undertaken by the Bharat Contractors Ltd., and their accounts on 31st December, 2010 showed the following position:

	<i>Contract A</i>	<i>Contract B</i>	<i>Contract C</i>
	₹	₹	₹
Contract price	8,00,000	5,40,000	6,00,000
<i>Expenditure:</i>			
Raw materials	1,44,000	1,16,000	40,000
Wages paid	2,20,000	2,24,800	28,000
General charges	8,000	5,600	2,000
Plant installed	40,000	32,000	24,000
Materials in hand	8,000	8,000	4,000
Wages accrued	8,000	8,000	3,600
Work certified	4,00,000	3,20,000	72,000
Work finished but not certified	12,000	16,000	4,200
Cash received in respect of work certified	3,00,000	2,40,000	54,000

The plant was installed on the date of commencement of each contract; depreciation is to be taken at 10 percent per annum.

Prepare the Contract Accounts in tabular form and show how they would appear in the Balance Sheet as on 31st December, 2010.

**Solution:****Contract Accounts**

Particulars	A	B	C	Particulars	A	B	C
	₹	₹	₹		₹	₹	₹
To Raw material	1,44,000	1,16,000	40,000	By Material in hand	8,000	8,000	4,000
To Wages paid	2,20,000	2,24,800	28,000	By Plant in hand			
				less depreciation**	36,000	30,400	23,400
To General charges	8,000	5,600	2,000	By Work-in-progress:			
To Plant	40,000	32,000	24,000	Work certified	4,00,000	3,20,000	72,000
To Wages accrued	8,000	8,000	3,600	Work finished			
				but not certified	12,000	16,000	4,200
To Balance c/d	36,000	—	6,000	By Profit and			
				Loss A/c	—	12,000	—
	<u>4,56,000</u>	<u>3,86,400</u>	<u>1,03,600</u>		<u>4,56,000</u>	<u>3,86,400</u>	<u>1,03,600</u>
To Profit and Loss A/c				By Balance c/d	36,000	—	6,000
36,000 x							
2/3 x 3/4 =	18,000	—	—				
To Work-in-progress (Profit in Reserve)	<u>18,000</u>	—	<u>6,000</u>				
	<u>36,000</u>	—	<u>6,000</u>		<u>36,000</u>	—	<u>6,000</u>

**Balance Sheet as on 31st December 2010**

	₹	₹		₹	₹
Profit and Loss A/c:			Materials in hand:		
Profit on Contract A	18,000		Contract A	8,000	
Less:			Contract B	8,000	
Loss on Contract B	<u>12,000</u>	6,000	Contract C	<u>4,000</u>	20,000
Sundry Creditors:			Plant in hand:		
Wages Accrued			Contract A	36,000	
Contract A	8,000		Contract B	30,400	
Contract B	8,000		Contract C	<u>23,400</u>	89,800
Contract C	<u>3,600</u>	19,600	Work-in-Progress:		
			Contract A	3,94,000	
			Contract B	3,36,000	
			Contract C	<u>70,200</u>	
				8,00,200	
			Less :		
			Advances from		
			contractees:		

\* Depreciation on Plant: Depreciation on plant is to be provided @ 10% p.a., so depreciation only for that period for which plant has been used will be deducted in order to arrive at the closing value of plant in land.

Contract A	3,00,000	
Contract B	2,40,000	
Contract C	<u>54,000</u>	
	<u>5,94,000</u>	2,06,200

**Workings:***(1) Calculation of depreciation on plant*

Contract	Cost ₹	Contract commenced on	Depreciation for what period	Amount of depreciation ₹	Closing balance of Plant ₹
A	40,000	1st Jan., 2010	Full year	$40,000 \times \frac{10}{100} = 4,000$	36,000
B	32,000	1st July, 2010	6 months	$32,000 \times \frac{10}{100} \times \frac{6}{12} = 1,600$	30,400
C	24,000	1st Oct., 2010	3 months	$24,000 \times \frac{10}{100} \times \frac{3}{12} = 600$	23,400

*(2) Calculation of work-in-progress expenditures*

	Contracts		
	A ₹	B ₹	C ₹
Raw materials	1,44,000	1,16,000	40,000
Wages	2,20,000	2,24,800	28,000
General charges	8,000	5,600	2,000
Plant	40,000	32,000	24,000
Wages accrued	<u>8,000</u>	<u>8,000</u>	<u>3,600</u>
Total	4,20,000	3,86,400	97,600
Less: Materials in hand	<u>8,000</u>	<u>8,000</u>	<u>4,000</u>
	4,12,000	3,78,400	93,600
Less: Plant in hand	<u>36,000</u>	<u>30,400</u>	<u>23,400</u>
Total net expenditure of the period	3,76,000	3,48,000	70,200
Add: Profit transferred to Profit and Loss A/c	18,000	—	—
Less: Loss transferred to Profit and Loss A/c	<u>—</u>	<u>12,000</u>	<u>—</u>
Work-in-progress	<u>3,94,000</u>	<u>3,36,000</u>	<u>70,200</u>

## 6. PROFITS ON INCOMPLETE CONTRACTS (BASED ON AS 7 – REVISED 2002)

The basic principle of ascertaining profits on incomplete contracts is to give credit to share of profit on the outcome of a contract which can reasonably be foreseen. In calculating the total estimated profit on the contract, it is necessary to take into account the total costs to date and the total estimated further costs to completion and the estimated future costs or rectification and guarantee work, and any other future work to be undertaken. These are then compared to the total contract price.

The profit taken in any year is calculated on a cumulative basis having regard to profit taken in the earlier years. The amount to be reflected in the year's profit and loss account will be the appropriate proportion of this total profit by reference to the work done to date, less any profit already taken in previous year.

Hence, the profit is calculated as follows:

	(₹)
Total contract value	.....
Less: Costs incurred to date	.....
Estimated costs to completion	.....
Rectification and guarantee work	.....
Total estimated contract costs	.....
Estimated profit or loss on the contract	.....

The estimated profit should be adjusted in the following formula:

$$\text{Profit to date} = \frac{\text{Cost of work completed}}{\text{Total estimated contract cost}} \times \text{Estimated contract profit}$$

The amount of profit to be recognized in the current period is calculated on cumulative principles as under:

	(₹)
Profit to date	.....
Less: Profit recognized at the end of previous period	.....
Profit recognized in current period	.....

If a loss is disclosed, then this should be provided in full in the current period.

These general principles have been focused in the Accounting Standard (AS-7) Revised 2002 – 'Construction Contracts' issued by the Institute of Chartered Accountants of India. It is stated that when the outcome of a construction contract can be estimated reliably, contract revenue and contract costs associated with the construction contract should be recognized as revenue and expenses respectively by reference to the stage of completion of the contract activity at the reporting date. An expected loss on the construction should be recognized as an expense immediately.

However when the outcome of a construction cannot be estimated reliably then,

- (a) revenue should be recognized only to the extent of contract cost incurred of which recovery is probable; and

- (b) contract costs should be recognized as an expense in the period in which they are incurred.

An expected loss on the construction contract should be recognized as an expense. When it is probable that total contract cost will exceed total contract revenue the expected loss should be recognized as an expense immediately.



*For Example:*

The profit to be recognized as per AS 7 in the current period with regard to the following information is calculated as under:

Contract price	₹99,00,000
Cumulative figures:	
To end of previous period-profit recognized	₹2,25,000
To end of current period-total costs	₹49,50,000
Cost of work certified	₹36,00,000
Estimated future costs to completion	₹27,00,000
Estimated rectification costs	10% of contract price

*Answer:*

Contract Price		₹99,00,000
Less: Costs to date	₹49,50,000	
Costs to complete	27,00,000	
Rectification costs	<u>9,90,000</u>	<u>86,40,000</u>
Estimated contract profit		<u>12,60,000</u>

$$\begin{aligned} \text{Profit to date} &= \frac{\text{Cost of Work Certified}}{\text{Estimated Total Cost}} \times \text{Estimated Profit} \\ &= \frac{36,00,000}{86,40,000} \times 12,60,000 = ₹5,25,000 \end{aligned}$$

$$\text{Profit in current period} = ₹5,25,000 - ₹2,25,000 = ₹3,00,000.$$

### Illustration 11

XYZ contractors obtained a contract to construct a house for ₹8,00,000. Work was started on 1st January, 2010 and it was estimated that contract would take 15 months to complete. Work is proceeding as per schedule and the details upto 31st December 2010 are as follows:

Materials and stores	1,87,000	₹
Wages Paid	2,70,000	
Plant hire charges and other expenses	60,000	
Establishment charges	54,000	
Material unused	11,000	
Work Certified	6,00,000	
Cash received	5,40,000	
Work not yet certified (at cost)	20,000	

It is further estimated that the following further expenses will be required to complete the work:

Additional material: ₹25,000; Wages : ₹20,000; Sub Contract cost : ₹50,000;

Plant hire charges : ₹10,000; Establishment Expenses : ₹11,800; and provision for contingencies : 5% of total cost

You are required to calculate the value of Work in Progress as on 31<sup>st</sup> December 2010 taking credit for a reasonable profit and also show the contract account.

**Solution:**

Dr.	<b>Contract Account as on 31<sup>st</sup> December, 2010</b>		Cr.
	₹		₹
To Material and Stores	1,87,000	By Material and stores	11,000
To Wages	2,70,000	By Work in Progress :	
To Plant hire charges & expenses	60,000	(a) Work uncertified at cost	20,000
To Establishment expenses	54,000	(b) Value of work certified	6,00,000
To Notional Profit c/d	<u>60,000</u>		<u>        </u>
	6,31,000		6,31,000
To Profit & Loss Account	57,000	By Notional Profit b/d	60,000
To Work in progress (balancing figure)	<u>3,000</u>		<u>        </u>
	<u>60,000</u>		<u>60,000</u>

**Statement of Estimated Cost and Estimated Profit**

Cost incurred upto 31st December, 2010	₹
(₹1,87,000 + 2,70,000 + 60,000 + 54,000) – 11,000	5,60,000
<i>Add :</i> Additional Estimated Cost	
Material (₹11,000 + 25,000)	36,000
Wages	20,000
Sub-contract cost	50,000
Plant hire charges	10,000
Establishment charges	<u>11,800</u>
Estimated cost before provision	6,87,800
<i>Add :</i> Provision for Contigencies = (5/95) x 6,87,800	<u>36,200</u>
Estimated total cost	<u>7,24,000</u>

Estimated profit = ₹8,00,000 – 7,24,000 = ₹76,000

$$\begin{aligned} \text{Profit to P\&L Account} &= \frac{\text{Estimated Profit} \times \text{Work certified}}{\text{Contract price}} \\ &= \frac{76,000 \times 6,00,000}{8,00,000} = ₹57,000 \end{aligned}$$

Alternatively,

$$\begin{aligned} \text{Profit to P\&L Account} &= \frac{\text{Estimated Profit} \times \text{Cash Received}}{\text{Contract price}} \\ &= \frac{76,000 \times 5,40,000}{8,00,000} = ₹51,300 \end{aligned}$$

**Value of Work in Progress as on 31st December, 2010 to be shown in Balance Sheet**

	₹
Work in progress :	
Value of work certified	6,00,000
Cost of work uncertified	<u>20,000</u>
	6,20,000
Less : Reserve for unrealized profit : 3,000	
Amount received from contractee <u>5,40,000</u>	<u>5,43,000</u>
	77,000

**Note:** Based on Accounting Standard (AS) – 7, Construction Contracts, the profit to date can be estimated as under :

	₹
Total contract price	8,00,000
Less: Costs to date 5,60,000	
Additional estimated cost <u>1,64,000</u>	<u>7,24,000</u>
Estimated contract profit	<u>76,000</u>

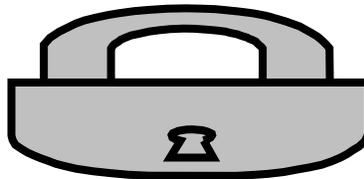
$$\begin{aligned} \text{Profit to date} &= \frac{\text{Cost of work certified} \times \text{Estimated profit}}{\text{Estimated total cost}} \\ &= \frac{₹6,00,000 \times 76,000}{7,24,000} = ₹62,983 \end{aligned}$$

### LESSON ROUND UP



- Unit costing refers to the costing procedure, which is ideally used in case of concerns producing a single article on large scale by continuous manufacture. The cost units are identical with identical costs. The cost incurred during a period is divided by the total output for ascertaining the cost per unit.
- Cost sheet is a document which provides for the assembly of the detailed cost of a cost centre or cost unit.
- Production account is an account giving details of cost of production, cost of sales and profit made during a particular period.
- Contract costing is that form of specific order costing which applies where work is undertaken as per customers' special requirements and each order is of long duration.
- Escalation clause is a provision in the contract for adjustment of prices quoted and accepted, in the event of specified contingencies.
- Cost plus contract is a contract where the contractee agrees to pay to the contractor the cost price for the work done on the contract plus an agreed percentage thereof by way of overhead cost and profit.
- Work certified is the work approved by the contractee or his nominee on a specific date.
- Work which has not been so far approved by the contractee or his nominee is known as work uncertified.

### SELF TEST QUESTIONS



1. Describe the different components of total cost.
2. Draw up a job cost-sheet for a simple product, to find out the cost of a product.
3. What is cost sheet? In what respect it differs from production account?
4. Discuss the nature of contract costing and explain how costs are recorded in contracts.

5. Discuss briefly the principles to be followed while taking credit for profit on incomplete contracts.
6. Explain the terms: (a) escalation clause and (b) cost plus contract.
7. The cost of sales of product A is made up as follows :

	₹
Materials used in manufacturing	5,500
Mateirals used in packing materials	1,000
Materials used in selling the product	150
Materials used in the factory	75
Materials used in office	125
Labour required in production	1,000
Labour required for supervision of the management of factory	200
Expenses - direct, factory	500
Expenses - indirect, factory	100
Expenses - office	125
Depreciation - office building and equipment	75
Depreciation - factory	175
Selling expenses	350
Freight	500
Advertising	125

Assuming that all the products manufactured are sold, what should be the selling price to obtain a profit of 25% on selling price ?

Illustrate in a chart form for presentation to your manager, the division of costs for Product A.

8. From the following particulars of a manufacturing firm, prepare a statement showing: (a) Cost of Materials Used, (b) Prime Cost, (c) Works Cost, (d) Cost of Production, (e) Cost of Sales, and (f) Profit Earned.

	₹
Stocks of materials on 1st January, 2011	40,000
Purchase of materials in January, 2011	11,00,000
Stock of Finished goods on 1st January, 2011	50,000
Stock of work-in-progress on 1st January, 2011	35,000
Productive wages	5,00,000
Works overhead charges	1,50,000
Office and administration overheads	90,000
Selling and distribution overheads	60,000
Stock of materials on 31st January, 2011	1,40,000
Stock of finished goods on 31st January, 2011	60,000
Stock of work-in-progress on 31st January, 2011	25,000
Finished Goods sold in January, 2011	22,50,000

9. In a factory, two types of radios are manufactured viz. Orient and Sujan Models. From the following particulars, prepare a statement showing cost and profit per radio sold. There is no opening or closing stock.

	<i>Orient</i>	<i>Sujan</i>
	₹	₹
Direct materials	27,300	1,08,680
Direct labour	15,600	62,920

Works overhead is charged @ 80% on labour and office overhead is taken at 15% on works cost. The selling price of both the radios is ₹1,000 each. 78 Orient radios and 286 Sujan radios were sold.

10. A firm of building contractors began to trade on 1st January, 2010. During the year, the company was engaged on only one contract. The contract price was ₹ 50,00,000.

Of the plant and materials charged to the contract, the plant which cost ₹50,000 and materials which cost ₹40,000 were lost in an accident.

On December 31, 2011, the plant which cost ₹50,000 was returned to the stores the cost of work done but uncertified was ₹20,000 and the materials costing ₹40,000 were in hand on site.

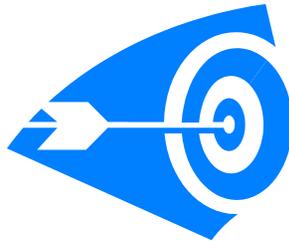
Charge 10% depreciation of the plant, carry forward by way of reserve one-third of the profit received and compile the Contract Account and the Balance Sheet from the following Trial Balance on December 31, 2011.

	₹	₹
Share capital		12,00,000
Creditors		1,00,000
Cash received on contract (80% of work certified)		20,00,000
Land, buildings, etc.	4,30,000	
Bank balance	2,50,000	
Charged to contract		
Materials	9,00,000	
Plant	2,50,000	
Wages	14,00,000	
Expenses	70,000	
	<u>33,00,000</u>	<u>33,00,000</u>

(Ans.: P & L A/c ₹1,12,000, Balance sheet total ₹13,22,000)

STUDY XIII  
**BUDGETARY CONTROL**

**LEARNING OBJECTIVES**



Understand the meaning of budgets and budgetary control.

- Distinguish between forecast and budget.
- Describe the basic objectives of budgetary control.
- Discuss the advantages and limitations of budgetary control.
- Enumerate the pre-requisites for adoption of budgetary control.
- Describe the various steps involved in the installation of budgetary control system.
- Classify different categories of budgets.
- Able to prepare flexible budgets, fixed budgets and master budgets.
- Understand the significance of zero base budgeting and performance budgeting.

**1. BUDGET**

In his "A Dictionary for Accountants", Kohler defines budget as:

1. Any financial plan serving as an estimate of and a control over future operations.
2. Hence, any estimate of future costs.
3. Any systematic plan for the utilisation of manpower, material or other resources.

The Chartered Institute of Management Accountants, London, (terminology) defines a budget as "a plan expressed in money. It is prepared and approved prior to the budget period and may show income, expenditure and the capital to be employed. May be drawn up showing incremental effects on former budgeted or actual figures, or be compiled by zero-based budgeting." A budget, thus is a precise statement of the financial and quantitative implications of the course of action that management has decided to follow in the immediate next period of time (usually a year).

Thus the essential features of a budget are as follows:

- (i) It is a statement expressed in monetary and/or physical units prepared for the implementation of policy formulated by the management.

- (ii) It is laid down prior to the budget period during which it is followed.
- (iii) It is prepared for the definite future period.
- (iv) The policy to be followed to attain the given objective must be laid before the budget is prepared.

## 2. BUDGETARY CONTROL

Budgetary control is intimately connected with budgets. The Chartered Institute of Management Accountants, London defines Budgetary control as ~~the~~ establishment of budgets, relating the responsibilities of executive to the requirements of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objectives of that policy or to provide a firm basis for its revision". A budgetary control system secures control over performance and costs in the different parts of a business:

- (i) by establishing budgets
- (ii) by comparing actual attainments against the budgets; and
- (iii) by taking corrective action and remedial measures or revision of the budgets, if necessary.

The budget is a blue-print of the projected plan of action expressed in quantitative terms and for a specified period of time. The budgets put the plan in a concrete form and follow up action to see that plan is adhere to complete the system of control. In other words, while budgeting is the art of planning, budgetary control is the act of adhering to the plan. In fact, budgetary control involves continuous comparison of actual results with the budgets and taking appropriate remedial action promptly.

It is well recognised that a control system involves fixing of targets (in the form of specific tasks), collection of information regarding actuals and continuous comparison of actuals with the targets with a view to reporting for action. A budgetary control system, in this sense is also a control system. It is an excellent system for decentralisation of authority without losing control over the operations of the firm.

One should not consider (budgets or) budgetary control as something rigid or strait-jacket. It is one of the system whereby dynamism is infused into an organisation through the process of targets, the achievement of which will mean progress; of allowing a good deal of freedom of action within the delegated field of executives and of seeing to it that all concerned will work in a concerted manner for achieving the firm's objectives. There is always a good scope for initiative and drive but not for recklessness or too much caution. De Paula has put the main idea of budgetary control through an analogy thus ~~the~~ position may be linked to the navigation of a ship across the sea. The log is kept written regarding happenings and position of the ship from hour to hour and valuable lessons are to be learnt by the captain from a study of the factor that caused the misadventures in the past. But to navigate his ship safely over the seven seas the captain requires his navigating officer to work out the course ahead and constantly to check his ship's position against the predetermined one. If the ship is off its course, the navigating officer must report immediately so that the captain may take prompt action to regain his correct course".

–Exactly so it is with the industrial ship; the past records represent the log and the auditor is responsible for verifying so far as he can that those records are correct and reveal a true and fair view of the financial position of the concern. But what modern management requires for day-to-day operating purposes is forecasts showing in detail anticipated course of business for (say) the coming year. During the course of the years' operations the management requires immediate reports of any material variance from the predetermined course together with explanation of the reasons for variations”.

In short, budgetary control means laying down in momentary and quantitative term what exactly has to be done and how exactly it has to be done over the coming period and then to ensure that actual results do not diverge from the planned course more than necessary. The word “necessary” is not to be loosely interpreted. Divergence due to inefficiency is not necessary.

### 3. FORECAST AND BUDGET

A forecast is an assessment of probable future events. Budget is an operating and financial plan of a business enterprise. At planning stage it is necessary to prepare forecasts of probable course of action for the business in future. Budget is a sort of commitment or a target which the management seek to attain on the basis of the forecasts made. Forecasts are made regarding sales, production cost and financial requirements of the business. A forecast denotes some degree of flexibility while a budget denotes a definite target.

The following points of distinction can be noted between forecast and budget:

<i>Forecast</i>	<i>Budget</i>
(i) Forecast is a mere estimate of what is likely to happen. It is a statement of probable events which are likely to happen under anticipated conditions during a specified period of time.	Budget shows that policy and programme to be followed in a future period under planned conditions.
(ii) Forecasts, being statements of future events, do not connote any sense of control.	A budget is a tool of control since it represents actions which can be shaped according to will so that it can be suited to the conditions which may or may not happen.
(iii) Forecasting is a preliminary step for budgeting. It ends with the forecast of likely events.	It begins when forecasting ends. Forecasts are converted into budgets.
(iv) Forecasts have wider scope, since it can be made in those spheres also where budgets can not interfere.	Budgets have limited scope. It can be made of phenomenon non capable of being expressed quantitatively.

### 4. OBJECTIVES OF BUDGETARY CONTROL

The objectives of budgetary control are the following :

- (1) To use different levels of management in a co-operative endeavour for achievement of the objectives of the firm.

- (2) To facilitate centralised control with delegated authority and responsibility.
- (3) To achieve maximum profitability by planning income and expenditure through optimum use of the available resources.
- (4) To ensure adequate working capital in other resources for efficient operation of business.
- (5) To reduce losses and wastes to the minimum.
- (6) To bring out clearly where effort is needed to remedy the situation.
- (7) To see that the firm is not deflected from marching towards its long-term objectives without being overwhelmed by emergencies.
- (8) Various activities like production, sales, purchase of materials etc. are co-ordinated with the help of budgetary control.

## **5. ADVANTAGES OF BUDGETARY CONTROL**

Budgetary control makes all the differences between drifting in an uncharted sea and following a well plotted course towards a predetermined destination. It serves as a valuable aid to management through planning, co-ordination and control.

The principal advantages of a budgetary control system are enumerated below:

- (1) Budgetary control aims at maximisation of profits through effective planning and control of income and expenditure - directing capital and resources to the best and most profitable channel.
- (2) There is a planned approach to expenditure and financing of the business so that economy is affected in the utilisation of funds to the optimum benefit of the concern.
- (3) It provides a clear definition of the objective and policies of the concern and a tool for objecting these policies to periodic examination.
- (4) The task of managerial co-ordination is facilitated through budgetary control.
- (5) Since each level of management is aware of the task and is fully conscious as to the best way by which it is to be performed, maximum effective utilisation of men, materials and resources can be attained.
- (6) Reports are furnished under the principles of management or control by exception. Only deviations from budgets which point out the weak spots and inefficiencies are properly looked into.
- (7) It cultivates in the management the habit of thinking ahead - making careful study of the problems in advance before taking decisions.
- (8) A budgetary control system assists delegation of authority and is a powerful tool of responsibility accounting.
- (9) Budgets are the fore-runners of standard costs in the sense that they create necessary conditions to suit setting up of standard costs.
- (10) The method of evaluating performance against budgets provides a suitable basis for establishing incentive system of remuneration by results as also spotting people with exceptional qualities of leadership and management.
- (11) Since it involves foreseeing difficulties of various types, it will lead to their removal in time.

## **6. LIMITATIONS OF BUDGETARY CONTROL**

- (1) Budgetary control starts with the formulation of budgets which are mere estimates. Therefore, the adequacy or otherwise of budgetary control system, to a very large extent, depends upon the adequacy or accuracy with which estimates are made.
- (2) Budgets are meant to deal with business conditions which are constantly changing. Therefore, budgets estimates lose much of their usefulness under changing conditions because of their rigidity. It is necessary that budgetary control system should be kept adequately flexible.
- (3) The system of budgetary control is based on quantitative data and represent only an impersonal appraisal to the conduct of business activity unless it is supported by proper management of personal administration.
- (4) It has often been found that in practice the organisation of budgetary control system become top heavy and, therefore, costly specially from the point of view of small concern.
- (5) Budgets and budgetary control have given rise to a very unhealthy tendency to be regarded as the solvent of all business problems. This has resulted in a very luke-warm human effort to deal with such problems and ultimately results in failure of budgetary control system.
- (6) It is a part of human nature that all controls are resented to. Budgetary control which places restrictions on the authority of executive is also resented by the employees.

The limitations stated above merely point to the need of maintaining the budgetary control system on a realistic and dynamic basis rather than as a routine.

## **7. PRELIMINARIES FOR THE ADOPTION OF A SYSTEM OF BUDGETARY CONTROL**

For the successful implementation of a system of budgetary control certain pre-requisites are to be fulfilled. They are summarised below:

- (1) There should be an organisation chart laying out in clear terms the responsibilities and duties of each level of executives and the delegation of authority to the various levels.
- (2) The objectives, plans, and policies of the business should be defined in clear cut and unambiguous terms.
- (3) The budget factor or the key factor(s) which will be the starting point of the preparation of the various budgets should be indicated.
- (4) For formulation and efficient execution of the plan, a Budget Committee should be set up.
- (5) There should be an efficient system of accounting to record and provide data in line with the budgetary control system.
- (6) There should be a proper system of communication and reporting between the various levels of management.
- (7) There should be a Budget Manual wherein all details regarding the plan and its procedure of operation are given as also the length of the budget period.
- (8) The budgets should primarily be prepared by those who are responsible for performance.

- (9) The budgets should be comprehensive, complete, continuous and realistic to attain.
- (10) There should be an assurance from the top management executives for co-operation and acceptance of the budgetary control system.
- (11) For the success of a budgetary control system, it is essential that there should be a sound organisation for budget preparation, budget maintenance, and budget administration. The budgetary control organisation is usually headed by a top executive who is known variously as the Budget Controller, Budget Director, or Budget Officer, who may have under him a Budget Committee constituted with the representatives of various departments like purchases, sales, production, development, administration and accounts.

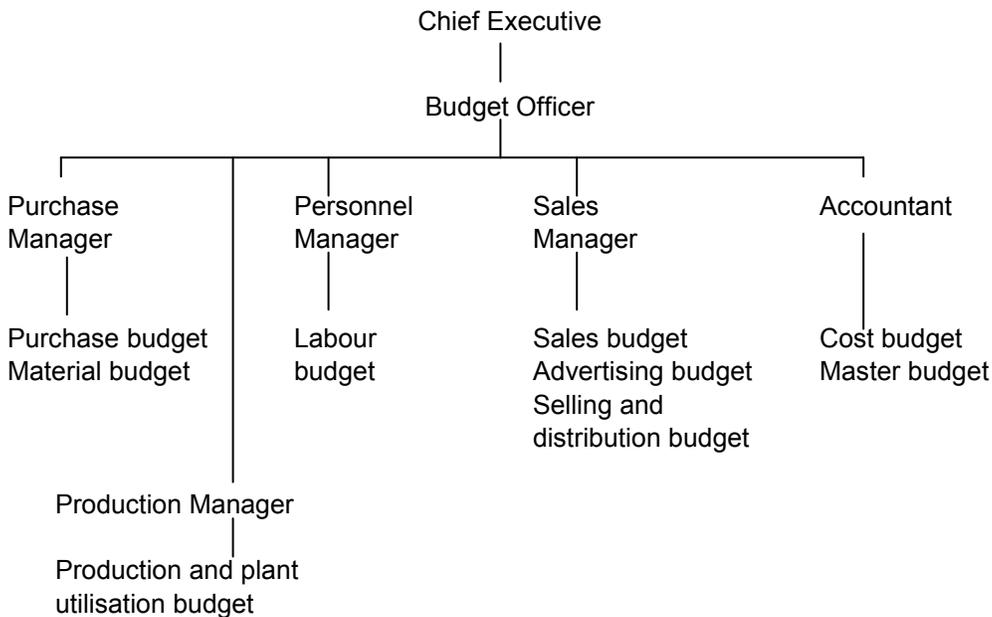
Unless the philosophy of budgeting and budgetary control is accepted by everyone in authority, the system may work only haphazardly. The full and frank and active cooperation of all is required while framing budgets. Then only they will feel committed to the achievements of targets set for them.

### 8. INSTALLATION OF BUDGETARY CONTROL SYSTEM

The following steps should be considered in detail for sound budgets and for successful implementation of the budgetary control system.

(i) *Organisation Chart*: An organisational chart is a statement defining functional representatives of executives responsible for accomplishment of organisational objectives. This chart shows:

- (i) Functional responsibility of a particular executive.
- (ii) Delegation of authority to various levels.
- (iii) Relative position of a functional head with heads of other functions. An organisation chart for budgetary control may be as follows:



(ii) *Budget Centre*: A budget centre is a section of the organisation of the undertaking defined for the purpose of budget control. Budget centre should be established for cost control and all the budgets should be related to cost centres. Budget centres will disclose the sections of the organisation where planned performance is not achieved. Budget centre must be separately delimited because a separate budget has to be set with the help of the head of the department concerned. To illustrate, production manager has to be consulted for the preparation of production budget and finance manager for cash budget.

(iii) *Budget Manual*: A budget manual is a document which sets outstanding instructions governing the responsibilities of persons and the procedures, forms and records relating to the preparation and use of budgets and it is a booklet containing standing instructions regarding the procedures to be followed and the time schedules to be observed. The following are some important matters dealt with in the budget manual:

- (i) the dates by which preliminary forecasts and plans are to be submitted;
- (ii) the form in which these are to be submitted and the persons to whom these are to be forwarded;
- (iii) the important factors that must be considered for each forecast or plan;
- (iv) the categorisation of expenses, e.g., variable and fixed, and the manner in which each category is to be estimated and dealt with;
- (v) the manner of scrutiny and the personnel to carry it out;
- (vi) the matters which must be settled only with the consent of the managing director, departmental manager, etc.;
- (vii) the finalisation of the functional budgets and their compilation into the master budget;
- (viii) the form in which the various reports are to be made out, their periodicity and dates, the persons to whom these and their copies are to be sent;
- (ix) the reporting of the remedial action;
- (x) the manner in which budgets, after acceptance and issuance, are to be revised or amended; and
- (xi) the matters, included in budgets, on which action may be taken only with the approval of top management.

The main idea behind the budget manual is to inform line executives beforehand about procedures to be followed rather than issuing frequent instructions from the controller's office regarding procedures and forms to be used. Such frequent instructions can be a source of friction between the line and staff management.

(iv) *Budget Controller*: To line up the various functions of Budget Committee, to bring them together and to co-ordinate their efforts in the matter of preparation of target figures, there should be a person usually designated as the Budget Controller, who can provide ready data relating to all the functions. He is more or less the secretary to the budget committee. The Budget Controller does not control; he is staff man; he advises but does not issue instructions. His duties will comprise mainly of:

- (1) Helping in preparation of the various budgets and their coordination and compilation into the master budget;

- (2) Compiling of information about actual performance on a continuous basis comparing it against the budget figures, ascertaining causes of deviation and preparing reports based thereon and sending them to the appropriate executive;
- (3) Bringing to the notice of the management the need for revision of budgets and assisting them in the task; and
- (4) Compiling information of all types for the purposes of efficient preparation of budgets and proper reporting.

(v) *Budget Committee:* The budget committee is a group of representatives of various functions in an organisation. As all functions are inter-related and as any change in one's target will have its impact on that of the other, it is necessary to discuss the targets so that a mutually agreed programme is determined. This is the co-ordination in budget making. It is a powerful force in knitting together the various activities of the business and enforcing real control over operations. The budget manual should specify the responsibilities and duties of the budget committee, which should include the following:

- (1) Receive and review budget estimates from the respective divisions or departments and make recommendations.
- (2) Recommend decisions on budget matters where there may be conflicts between departments or divisions.
- (3) Recommend changes and approval of the revised budget.
- (4) Receive, study and analyse periodic reports comparing the budget with actual performance. Consider policies with respect to follow-up procedures.
- (5) Consider and make recommendations for revision of the budget when conditions warrant.
- (6) Consider recommendations for changes in budget policies and procedures.
- (7) Make recommendations for the budget manual.

(vi) *Budget Period:* CIMA defines budget period as "the period for which a budget is prepared and used, which may then be sub-divided into control periods". It refers to the period of time covered by a budget. The broad classification in this regard has already been stated as "long-term budget" and "short-term budget".

The short-term budget itself could be bifurcated into yearly and quarterly budgets. Long-term budgets provide the perspective, since one would be able to have a view of what is likely to be achieved and what the chief problems are likely to be, such as, competition from new products. Short-term budgets, say, for a year are quite exact and those for a quarter even more so. These are particularly suitable for control purposes. A short-term budget need not necessarily be for one year. It is generally long enough to cover one season or business year.

In determining the length of the budget period the following factors should be considered:

- (i) The budget period should be long enough to complete production of the various products.
- (ii) For the business of a seasonal nature the budget period should cover at least one entire seasonal cycle.

- (iii) The budget period should be long enough to allow for the financing of production well in advance of actual needs.
- (iv) Major operations and drastic changes in plant lay-out or manufacturing methods must be planned far in advance to determine financial requirements.
- (v) The budget period should coincide with the financial accounting period to compare actual results with budgeted estimates.

A budget period should be distinguished from "control period". The latter indicates the periodicity with which reports are sent to the various levels of management. It need not be the same as the budget period. Reports are sent usually at shorter intervals so that corrective action may be taken within the budget period. This would ensure that the overall variation between budget and actual is minimised. The periodicity of the reports is also dependent upon the urgency and significance of the matter under report.

(vii) *Budget Key Factor*: A budget key factor or principal budget factor is described by the CIMA London terminology as: "a factor which will limit the activities of an undertaking and which is taken into account in preparing budgets". The limiting factor is usually the level of demand for the products or services of the undertaking but it could be a shortage of one of the productive resources, e.g. skilled labour, raw material or machine capacity. In order to ensure that the functional budgets are reasonably capable of fulfilment the extent of the influence of this factor must first be assessed. As noted already all the functions in all organisations are interlinked. The target of one has influence on that of the other. If the sales department could sell only 50,000 units, it is no use of producing 1,00,000 units. If the production department has the capacity for 50,000 units, sales potential of 1,00,000 units is not of much consequence. Deliberations in the budget committee would lead to a decision regarding steps to get over a limiting factor. If one limiting factor is got over, another may creep up. Thus, there is a possibility of varying limiting factors under different circumstances. Decision will have to be taken resulting in optimum production keeping in view the different limiting factors. The basic issue is an enquiry into the future. All probabilities under different circumstances are to be worked out to fix the target at the optimum level. This may sometimes involve lengthy mathematical calculations.

The following is a list of principal budget factors which will influence the targets: (a) customer demand, (b) plant capacity (c) availability of raw material, skilled labour and capital, (d) availability of accommodation for plant, raw materials and finished goods and (e) governmental restrictions.

If a limiting factor cannot be got over by any means, then the whole budget involving all functions will have to be built around that factor. For instance, if the production capacity is 50,000 units and it cannot be increased in the short run, all budgets, say, the sales budget and raw materials purchase budget, will have to be based on the production of 50,000 units. To achieve maximum profitability, a key factor must be overcome, if not, at least efforts should be made to minimise its adverse effect.

(viii) *Budget Reports*: Performance evaluation and reporting of variances is an integral part of all control systems. Establishing budgets in itself is of no use unless a

comparison is made regularly between the actual expenditure and the budgeted allowances, and the results reported to the management. For this purpose, budget reports showing the comparison between the actual and budgeted expenditure should be presented periodically and promptly. The reports should be prepared in such a manner that they reveal the responsibility of a department or an executive and give full reasons for the variances so that proper corrective action may be taken. The reporting should be on the principle of exception and both favourable and unfavourable variances should be shown and commented upon. In brief, a budget report is a comparison of the actuals with the budgets both for the month and cumulative up to the current month. The variations from budgets are worked out in respect of each items of expenses so as to locate the responsibility and facilitate corrective action.

A budget report, to be effective in the purpose, must be:

- (i) Simple in its form so as to be easily intelligible to the recipient concerned: It should bear a suitable heading and make the period in which it relates;
- (ii) Regularly and promptly presented;
- (iii) Designed to give only the essential information required and avoid unnecessary details;
- (iv) Expressed as far as possible in direct figures;
- (v) Correlated to a "money value" wherever possible;
- (vi) Free from personal bias of the person preparing it; and
- (vii) Dated and signed by those who prepare and check it.

Every budget report should be followed up till the finally desired results are achieved. This follow-up would require either a discussion with the individual responsible for taking the necessary action or whose action alone can prevent recurrence of such variations; or revision in the budget itself arising out of errors of changes in policy.

A specimen budget report for expenses is given below:

### BUDGET REPORT

Department.....						Period.....
<i>Expense</i>	<i>Budgeted</i>	<i>Actual</i>	<i>Difference</i>		<i>Cumulative</i>	<i>Reasons</i>
			<i>Increase</i>	<i>Decrease</i>		
	₹	₹	₹	₹	₹	₹

- A. *Controllable*
- Repairs
  - Mach. Maintenance
  - Elect. Maintenance
  - Power
  - Lighting
  - Lubrication etc.

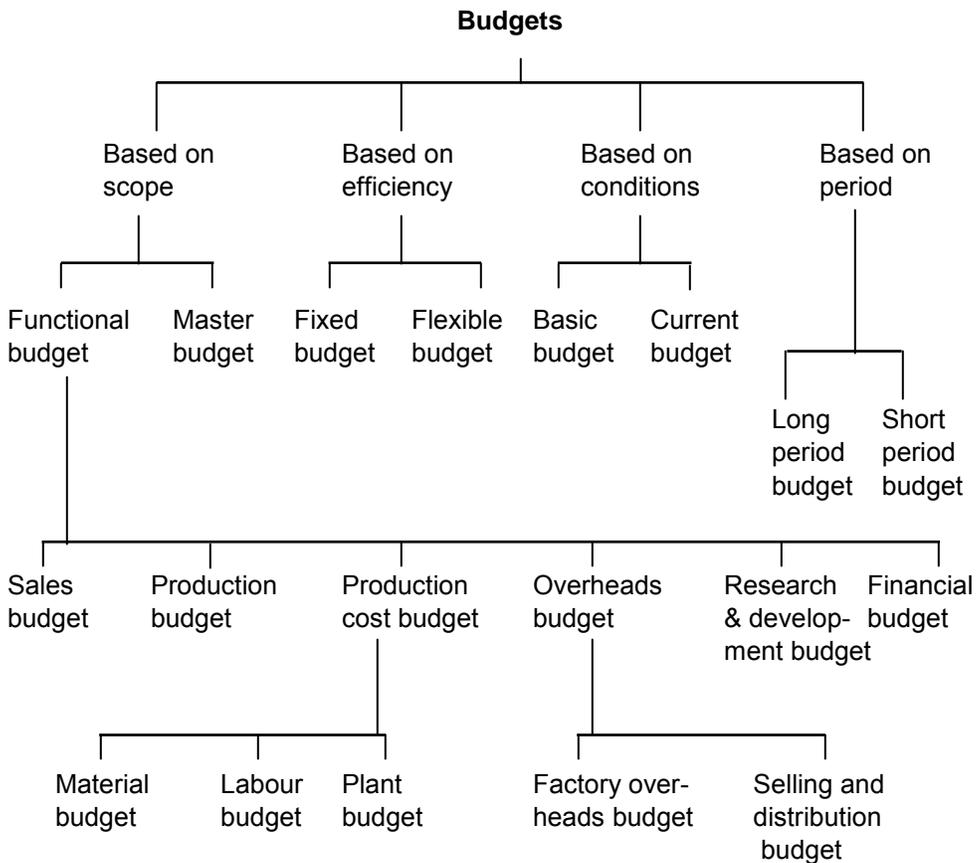
- B. *Non-controllable*
- Expense
- Floorspace
- General
- Prorated

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Total	
Date of preparation.....	Copies to:
Prepared by.....	1.....
Checked by.....	2.....
Submitted by.....	3.....

**9. CLASSIFICATION OF BUDGETS**

Depending upon the various bases adopted, budgets may be classified into different categories. Budgets may be classified on the basis of (i) the coverage or scope they encompass (ii) the capacity or efficiency to which they are related (iii) the conditions on which they are based and (iv) the periods which they cover. This is clearly shown with the help of the following diagram:



## 9.1 Functional Budgets

Budgets for a period are really classified according to the various activities in the organisation. All activities are interrelated. The forecasts for individual activities are prepared and co-ordinated with those of other activities and then consolidated to show the total effect of all the activities as a whole. Approved targets for individual functions are known as "functional budgets". The consolidation of all functional budgets is known as the "Master Budget". This is nothing but the targeted profit and loss statement and balance sheet of the organisation.

Principal functional budgets are:

(1) *Sales Budget*: The sales budget is a forecast of total sales, expressed in terms of money and quantity. The first step in the preparation of the sales budget is to forecast as accurately as possible the sales anticipated during the budget period. Sales forecasts are influenced by a variety of factors, external as well as internal. External factors include general business conditions, Government policy, etc. Internal factors consist of sales-prices, sales trend, new-products, etc. The sales-budget is based on sales forecasting which is the responsibility of the sales manager and market research staff. The sales budget is regarded as the keystone of budgeting.

(2) *Production Budget*: The production budget is a forecast of the production for budget period. It is prepared in two parts, viz., production value budget for the physical units of the products to be manufactured and the cost of manufacturing budget detailing the budgeted costs. The main steps involving in the preparation of a production budget are production planning; consideration of capacity; integration with sales forecasts, inventory-policies, management's overall policies. The operation of a production budget results in various advantages, main being: optimum utilisation of productive resources of the enterprise, production of goods according to schedule enabling the concern to adhere to delivery dates, proper scheduling of factors of production.

(3) *Materials Budget*: Materials requirement budget, commonly known as materials budget, assist the purchase department in suitably planning the purchases, fixing the maximum and minimum levels of materials, components etc. The timing and amount of funds which will be needed to make purchases are also known with the help of the materials budget.

(4) *Direct Labour Budget*: The labour content of each item of production as per the production budget is determined in terms of grades and trades of the workers required and the labour time for each job, operation and process. The rates of pay, allowances, bonus, etc., of each category are then considered and labour cost to be set for each budget centre is calculated by multiplying the wage rate with the labour hours for the number of units of products budgeted.

(5) *Manufacturing Overhead Budget*: The following steps are required to be taken up to prepare the manufacturing overhead budget:

- (i) Classification of expenditure into fixed, variable and semi-variable and collection thereof in accordance with a schedule of standing order numbers;
- (ii) Departmentalisation of expenditure;

- (iii) Determining the level of activity for setting the overhead rates; and level of activity may be actual, budgeted level or normal capacity; and
- (iv) Establishing the variable overhead rates per unit of production or productive hour.

(6) *Administration Cost Budget:* The administrative expenses include items of expenditure relating to higher management functions as well as expenses of the legal, financial, accounting and other services departments. Since most of the items of administration overhead are of a fixed nature, there is not much difficulty in establishing budgets for these items. The budgeted expenses are determined on the basis of amounts spent in previous years and the minimum requirements for the efficient operation of each department.

(7) *Selling Expenses Budget:* The selling expenses include all items of expenditure on the promotion, maintenance and distribution of finished products. This budget which is closely related to the sales budget is the forecast of the cost of selling and distribution, for the budgeted period. Selling and distribution expenses may be fixed or variable with regard to the volume of sales; separate budgets are usually established for fixed or variable selling and distribution expenses.

(8) *Research and Development Budget:* This depends mostly on management decisions regarding the research and development effort - the projects already in hand and the proposed projects.

(9) *Cash Budget:* Cash forecast precedes a cash budget. A cash forecast is an estimate showing the amount of cash which would be available in a future period. This budget usually of two parts giving detailed estimates of (i) cash receipts and (ii) cash disbursements. Estimates of cash-receipts are prepared on a monthly basis and depend upon estimated cash-sales, collections from debtors and anticipated receipts from other sources such as sale of assets, borrowings etc. Estimates of cash disbursements are based on estimated cash purchases, payment to creditors, employees remuneration, bonus, advances to suppliers, budgeted capital expenditure for expansion etc.

The main objectives of preparing cash budget are as follows:

- (i) The probable cash position as a result of planned operation is indicated and thus the excess or shortage of cash is known. This helps in arranging short term borrowings in advance to meet the situations of shortage of cash or making investments in times of cash in excess.
- (ii) Cash can be co-ordinated in relation to total working capital, sales investment and debt.
- (iii) A sound basis for credit for current control of cash position is established.
- (iv) The effect of sudden and seasonal requirements, large stocks, delay in collection of receipts etc. on the cash position of the organisation is revealed.

A cash budget can be prepared by any of the following methods:

- (i) Receipts and payments method
- (ii) Adjusted profit and loss account method
- (iii) Balance sheet method.

(i) *Receipts and Payments Method:* In this method the cash receipts from various sources and cash payments to various agencies are estimated. Delay in cash receipts and lag in payments are taken into account for making estimates. Since this method is based on the concept of cash accounting, accruals and adjustments obviously cannot find place in the preparation of cash budgets. The opening balance of cash of a period and the estimated cash receipts are added and from this, the total of estimated cash payments are deducted to find out the closing balance.

### Illustration 1

Prepare a cash budget of M/s Novan Television & Co. on the basis of the following information for the first six months of 2010:

- (a) Cost and prices unchanged.
- (b) Cash sales - 25% and credit sales - 75%.
- (c) 60% of credit sales are collected in the month after sales, 30% in the second month and 10% in the third. No bad debts are anticipated.
- (d) Sales forecasts are as follows:

October 2009	₹ 12,00,000	March 2010	₹ 8,00,000
November 2009	14,00,000	April 2010	12,00,000
December 2009	16,00,000	May 2010	10,00,000
January 2010	6,00,000	June 2010	8,00,000
February 2010	8,00,000	July 2010	12,00,000

- (e) Gross profit margin 20%.
- (f) Anticipated purchases:

January 2010	₹ 6,40,000
February 2010	6,40,000
March 2010	9,60,000
April 2010	8,00,000
May 2010	6,40,000
June 2010	9,60,000

- (g) Wages and Salaries to be paid:

January 2010	1,20,000
February 2010	1,60,000
March 2010	2,00,000
April 2010	2,00,000
May 2010	1,60,000
June 2010	1,40,000

- (h) Interest on ₹10,00,000 @ 12% on debentures is due by the end of March and June.
- (i) Excise deposit due in April ₹2,00,000.
- (j) Capital expenditure on plant and machinery planned for June ₹1,20,000.
- (k) Company has a cash balance of ₹4,00,000 at 31.12.2009.
- (l) Company can borrow on monthly basis.
- (m) Rent is ₹8,000 per month.





(ii) *Adjusted Profit and Loss Account Method:* In this method the opening balance is adjusted with the anticipated increases or decreases in current assets and liabilities, provision for depreciation, special receipts and the net profit for the year before taxation and appropriations. From the aggregate amount of these, the estimated taxation and dividends payable, expenditure on fixed assets and special payments if any are deducted. The resulting balance is the estimated cash in hand at the end of the budget period.

The vital point of difference between receipts and payments method and adjusted profit and loss method is that the former takes into account only cash transactions while the latter considers non cash items as it reverses all accruals. Further, adjusted profit and loss method gives only a broad idea of the cash position but receipts and payments method furnishes the maximum possible details.

### Illustration 2

Following are the Balance Sheets of Metal Engineering Limited one actual as on 31st December, 2009 and other forecast as on 31st December, 2010:

	2009 (Actuals)	2010 (Forecast)
	₹	₹
Cash	18,400	1,36,800
Debtors	49,000	83,200
Stock	61,900	92,500
Investments	1,00,000	90,000
Plant (at cost)	<u>2,20,000</u>	<u>2,40,000</u>
	<u>4,49,300</u>	<u>6,42,500</u>
Accounts Payable	67,300	1,00,000
Debentures	73,500	50,000
Accumulated Depreciation	50,000	30,000
Equity Share Capital	1,25,000	1,75,000
Profit and Loss Account	<u>1,33,500</u>	<u>2,87,500</u>
	<u>4,49,300</u>	<u>6,42,500</u>

The forecast Profit and Loss Account in a summarised form for the budget year ended 31st December, 2010 is as follows:

₹		₹			
To	Accumulated depreciation	22,000	By	Gross profit	2,00,000
—	Administration and selling expenses	10,000	"	Profit on the sale of investments	2,000
—	Income-tax	5,000	"	Interest	10,000
—	Interest charges	3,000			
—	Loss on sale of plant	8,000			
—	Net profit	<u>1,64,000</u>			
		<u>2,12,000</u>			<u>2,12,000</u>

To Dividend (including CDT)	10,000	By Net profit	1,64,000
— Balance c/d	<u>1,54,000</u>		
	<u>1,64,000</u>		<u>1,64,000</u>

Additional information:

- (i) New plant costing ₹80,000 was purchased during the year.
- (ii) An old plant, costing ₹60,000 and with accumulated depreciation of Rs. 42,000 was sold for ₹10,000.
- (iii) Investments costing ₹10,000 were sold for ₹12,000.

Prepare a cash budget for the management of the company by Adjusted Profit and Loss method.

**Solution:**

**Cash Budget (Adjusted Profit and Loss)**  
(for the Budget period ended 31st December 2010)

	₹	₹
Opening Balance of Cash		18,400
<i>Add:</i> Additions to Cash:		
Issue of share capital	50,000	
Sale of plant	10,000	
Sale of investments	12,000	
Depreciation written back	22,000	
Loss on sale of plant	8,000	
Increase in creditors	32,700	
Profit of the year	<u>1,64,000</u>	<u>2,98,700</u>
		3,17,100
<i>Less:</i> Reduction in Cash:		
Redemption of debentures	23,500	
Purchase of plant	80,000	
Payment of dividend (including CDT)	10,000	
Profit on sale of investments taken back	2,000	
Increase in stock	30,600	
Increase in debtors	<u>34,200</u>	<u>1,80,300</u>
Closing balance of cash		<u>1,36,800</u>

(iii) *Balance Sheet Method:* Under this method of preparing cash budget a forecast balance sheet is prepared as at the end of the budget period with all items of assets and liabilities except cash balance which is arrived at as a balancing figure. The magnitude of the two sides of the balance sheet excluding cash balance would determine whether the bank account would show a debit or credit balance i.e. cash balance at bank or bank overdraft.

10. *Capital Expenditure Budget:* Capital expenditure budget is the plan of the proposed outlay on fixed assets and is very closely related to the cash budget.

Capital expenditure forecasting is a continuous process and by nature it is a long-term function. Capital forecasts should be made for a number of years. Alongwith the long-term forecast, there should also be a short-term forecast to cover the general budget period under consideration. It is also essential that the capital expenditure budget be properly co-ordinated with all the operational budgets of the concern so as to form an integral part of the overall plan.

## **9.2 Master Budget**

Master budget is a consolidated summary of the various functional budgets. A master budget is the summary budget incorporating its component functional budget and which is finally approved, adopted and employed. It is the culmination of the preparation of all other budgets like the sales budget, production budget, purchase budget etc. It consists in reality of the budgeted profit and loss account, the balance sheet and the budgeted funds flow statement.

The master budget is prepared by the budget committee on the basis of co-ordinated functional budgets and becomes the target of the company during the budget period when it is finally approved. This budget acts as the company's individualised key to successful financial planning and control. It provides the basis of computing the effect of any changes in any phase of operations, such as sales volume, product mix, prices, labour costs, material costs or change in facilities. It segregates income, costs and profits by areas of responsibility. Master budget presents all this information to the depth appropriate for the top management action.

In the master budget, costs are classified and summarised by types of expenses as well as by departments. This information extends the range of usefulness of master budget. It is considered as the best mode of understanding the company's micro- economic position relating to the forthcoming budget period. Master Budget is not merely a compendium of theoretical calculations. The figures that it contains, are the reflection of the actual intentions of the company relating to different areas for the forthcoming budget period.

## **9.3 Fixed Budgets**

A budget may be established either as a fixed budget or a flexible budget. A fixed budget is a budget designed to remain unchanged irrespective of the level of activity actually attained. A fixed budget is one which is designed for a specific planned output level and is not adjusted to the level of activity attained at the time of comparison between the budgeted and actual costs. Obviously, fixed budgets can be established only for a small period of time when the actual output is not anticipated to differ much from the budgeted output. However, a fixed budget is liable to revision if due to business conditions undergoing a basic change or due to other reasons, actual operations differ widely from those planned in the fixed budget. These budgets are most suited for fixed expenses but they have only a limited application and is ineffective as a tool for cost control.

## **9.4 Flexible Budgets**

The Chartered Institute of Management Accountants, London defines flexible budget as a budget which by recognising different cost behaviour patterns, is

designed to change as volume of output changes. It is a budget prepared in a manner so as to give the budgeted cost for any level of activity. It is a budget which by recognising the difference between fixed, semi-fixed and variable cost is designed to change in relation to the activity attained. It is designed to furnish budgeted cost at any level of activity attained. Flexible budgeting is desirable in the following cases:

- (i) Where the level of activity during the year varies from period to period, either due to the seasonal nature of the industry or to variation in demand.
- (ii) Where the business is a new one and is difficult to foresee the demand.
- (iii) Where the undertaking is suffering from shortage of a factor of production such as materials, labour, plant capacity, etc.

The main characteristic of flexible budget is that it shows the expenditure appropriate to various levels of output. If the volume changes the expenditure appropriate to it can be established from the flexible budget for comparison with actual expenditure as a means of control. It provides a logical comparison of budget allowances with actual cost. When flexible budget is prepared, actual cost at actual activity is compared with budgeted cost at actual activity i.e. two things to a like base. For preparation of flexible budget, items of cost have to be analysed individually to determine how different items of cost behave to change in volume. Therefore, in-depth cost analysis and cost identification is required for preparation of flexible budget. Following are the striking features of flexible budgets:

- (i) They are prepared for a range of activity instead of a single level.
- (ii) They provide a very dynamic basis for comparison because they are automatically geared to changes in volume.
- (iii) They provide a tailor-made budget for a particular volume.
- (iv) These are based upon adequate knowledge of cost behaviour pattern.

Flexible budgets may be prepared in the following method:

- (i) Tabular method or multi-activity method
- (ii) Formula method or ratio method and
- (iii) Graphic method.

### Illustration 3

Following information is available from the records of Jay Ltd. for the year end 31st March 2010.

₹ (laks)

#### *Fixed Expenses*

Wages and salaries	9.5
Rent, rates and taxes	6.6
Depreciation	7.4
Sundry administrative expenses	6.5

#### *Semi-Variable Expenses*

(at 50% of capacity)

Maintenance and repairs	3.5
-------------------------	-----

Indirect labour	7.9
Sales department salaries	3.8
Sundry administrative expenses	2.8
<i>Variable Expenses</i>	
(at 50% of capacity)	
Materials	21.7
Labour	20.4
Other expenses	<u>7.9</u>
	<u>98.0</u>

Assuming that the fixed expenses remain constant for all levels of production, semi-variable expenses remain constant between 45% and 65% of capacity increasing by 10% between 65% and 80% and by 20% between 80% and 100%.

Sales at various levels are :

	₹ (lakhs)
50% capacity	100
60% —	120
75% —	150
90% —	180
100% —	200

Prepare a flexible budget for the year and forecast the profits at 60%, 75%, 90% and 100% of capacity.

**Solution:**

### Flexible Budget

	Period.....				
	50%	60%	75%	90%	100%
	₹	₹	₹	₹	₹
	(lakhs)	(lakhs)	(lakhs)	(lakhs)	(lakhs)
Sales	100	120	150	180	200
<i>Variable expenses</i>					
Materials	21.70	26.04	32.55	39.06	43.40
Labour	20.40	24.48	30.60	36.72	40.80
Other expenses	7.90	9.48	11.85	14.22	15.80
<i>Semi-variable expenses</i>					
Maintenance and repairs	3.50	3.50	3.85	4.20	4.20
Indirect labour	7.90	7.90	8.69	9.48	9.48
Sales Deptt. salary, etc.	3.80	3.80	4.18	4.56	4.56
Sundry administrative expenses	2.80	2.80	3.08	3.36	3.36

*Fixed expenses*

Wages and salaries	9.50	9.50	9.50	9.50	9.50
Rent, rates and taxes	6.60	6.60	6.60	6.60	6.60
Depreciation	7.40	7.40	7.40	7.40	7.40
Sundry administrative expenses	6.50	6.50	6.50	6.50	6.50
Total	<u>98.00</u>	<u>108.00</u>	<u>124.80</u>	<u>141.60</u>	<u>152.60</u>
Profit	2.00	12.00	25.20	38.40	47.40

**Illustration 4**

A firm at present operates at 60% of its capacity. At this level and at the level of 50% utilisation of capacity, the figures relating to its operations could be summarised as stated below:

	50%	60%
	₹	₹
Materials	10,00,000	12,00,000
Labour	8,00,000	9,00,000
Manufacturing overheads	6,00,000	6,60,000
Administrative overheads	3,50,000	3,50,000
Selling and distribution overheads	4,50,000	5,00,000
Research and development	<u>1,50,000</u>	<u>2,00,000</u>
Total	33,50,000	38,10,000
Profit	<u>1,50,000</u>	<u>3,90,000</u>
Sales	<u>35,00,000</u>	<u>42,00,000</u>

Draw up the budget at 80% utilisation of capacity assuming that -

- sales at this level can be maintained only by a flat 5% reduction in the selling price;
- economy in purchase of material will equal to 2-1/2% of the current amounts;
- the research and development expenditure will be pegged at ₹2,50,000 per annum; and
- administrative overheads will require 10% increase.

**Solution:****Budget at 80% capacity utilisation**

	60%	80%
	₹	₹
Materials	12,00,000	15,60,000
Labour	9,00,000	11,00,000
Manufacturing overheads	6,60,000	7,80,000
Administrative overheads	3,50,000	3,85,000

Selling and distribution overheads	5,00,000	6,00,000
Research and development	<u>2,00,000</u>	<u>2,50,000</u>
Total	38,10,000	46,75,000
Profit	<u>3,90,000</u>	<u>6,45,000</u>
Sales	<u>42,00,000</u>	<u>53,20,000</u>

**Working Notes:**

	₹	₹
(1) Materials at 60% capacity	12,00,000	
at 80% capacity	16,00,000	
Less: 2-1/2%	<u>40,000</u>	<u>15,60,000</u>

## (2) Variable fixed portions of various expenses

	50%	60%	Increase for 10%	Total	Fixed
	₹	₹	(variable)	variable	
Labour	8,00,000	9,00,000	1,00,000	6,00,000	3,00,000
Mfg. overhead	6,00,000	6,60,000	60,000	3,60,000	3,00,000
Selling overheads	4,50,000	5,00,000	50,000	3,00,000	2,00,000

## (3) At 80% Capacity:

Labour: Fixed	3,00,000	
Variable (₹1,00,000 for every 10%)	<u>8,00,000</u>	11,00,000
Mfg. overheads: Fixed	3,00,000	
Variable (₹60,000 for every 10%)	<u>4,80,000</u>	7,80,000
Selling overheads: Fixed	2,00,000	
Variable (₹50,000 for every 10%)	<u>4,00,000</u>	6,00,000

## (4) Sales: at 60% Capacity

at 60% Capacity	42,00,000	
at 80% Capacity	56,00,000	
Less: 5%	<u>2,80,000</u>	53,20,000

**Illustration 5**

ABC Ltd. produces and sells a single product. Sales budget for the calendar year 2011 for each quarter is as under:

Quarter	No. of Units to be Sold
I	12,000
II	15,000
III	16,500
IV	18,000

The year 2011 is expected to open with an inventory of 4,000 units of finished product and close with an inventory of 6,500 units. Production is customarily scheduled to provide for two-thirds of the current quarter's demand plus one-third of

the following quarter's demand. Thus production anticipates sales volume by about one month. The standard cost details for one unit of the product is as follows:

- Direct materials 10 Kgs. @ 50 paise per kg.
- Direct labour 1 hour 30 minutes @ ₹4 per hour.
- Variable overheads 1 hour 30 minutes @ ₹1 per hour.
- Fixed overheads 1 hour 30 minutes @ ₹2 per hour based on a budgeted production volume of 90,000 direct labour hours for the year.

Answer the following:

- (i) Prepare a production budget for the year 2011 by quarters, showing the number of units to be produced.
- (ii) If the budgeted selling price per unit is ₹17, what would be the budgeted profit for the year as a whole?
- (iii) In which quarter of the year the company is expected to break-even?

**Solution:**

*Number of units to be sold during the year 2011*

Quarter I	12,000 units
Quarter II	15,000 units
Quarter III	16,500 units
Quarter IV	<u>18,000 units</u>
Sales during the year	<u>61,500 units</u>

**(i) Production Budget (for the year 2011 by quarters)**

	Quarter I Units	Quarter II Units	Quarter III Units	Quarter IV Units	Total Units
Units to be produced in each quarter :					
2/3 <sup>rd</sup> of the current quarter's sales demand	8,000 $\left( \begin{array}{c} 2 \\ -- \times 12,000 \\ 3 \end{array} \right)$	10,000 $\left( \begin{array}{c} 2 \\ -- \times 15,000 \\ 3 \end{array} \right)$	11,000 $\left( \begin{array}{c} 2 \\ -- \times 16,500 \\ 3 \end{array} \right)$	12,000 $\left( \begin{array}{c} 2 \\ -- \times 18,000 \\ 3 \end{array} \right)$	41,000
Add : 1/3 of the following quarter's sales demand in first 3 quarters and closing inventory in the 4 <sup>th</sup> quarter	5,000 $\left( \begin{array}{c} 1 \\ -- \times 15,000 \\ 3 \end{array} \right)$	5,500 $\left( \begin{array}{c} 1 \\ -- \times 16,500 \\ 3 \end{array} \right)$	6,000 $\left( \begin{array}{c} 1 \\ -- \times 18,000 \\ 3 \end{array} \right)$	6,500	23,000
Total	13,000	15,500	17,000	18,500	64,000

(1)	Variable Cost per unit			
	Direct Material	: 10 kgs. @ 50 paise per kg.	5.00	₹
	Direct labour	: 1-½ hours @ ₹4 per hour	6.00	
	Variable overheads:	1-½ hours @ ₹1 per hour	<u>1.50</u>	<u>12.50</u>
(2)	Fixed overhead per annum:	90,000 hrs. @ ₹2 =	₹1,80,000	

(ii) **Statement of Budgeted Profit  
for the year (as a whole)**

Total Sales : 61,500 units @ ₹17 per unit	10,45,000
Less : Total Variable Cost : 61,500 units @ 12.50 per unit	<u>7,68,750</u>
Contribution	2,76,750
Less : Fixed cost for the year	<u>1,80,000</u>
Profit for the year 2011 as a whole	<u>96,750</u>

$$(iii) \quad \text{Break Even Point} = \frac{\text{Fixed Overheads}}{\text{Selling Price per unit} - \text{Variable Cost per unit}}$$

$$= \frac{₹1,80,000}{(₹17 - ₹12.50)} = 40,000 \text{ units.}$$

Total sales (in units) by the end of 3<sup>rd</sup> quarter will be 43,500 (i.e. 12,000 + 15,000 + 16,500).

Therefore, the company will break-even in the later part of the 3<sup>rd</sup> quarter.

### 9.5 Basic budgets

Basic budget has been defined as a budget which is prepared for use unaltered over a long period of time. This does not take into consideration current conditions and can be attainable under standard conditions.

### 9.6 Current budgets

A current budget can be defined as a budget which is related to the current conditions and is prepared for use over a short period of time. This budget is more useful than basic budget, as the target it lays down will be corrected to current conditions.

### 9.7 Long-term budgets

A long-term budget can be defined as a budget which is prepared for periods longer than a year. These budgets help in business forecasting and forward planning. Capital expenditure budgets and research developments budgets are just examples of long-term budgets.

### 9.8 Short-term budgets

This budget is defined as a budget which is prepared for a period less than a year and is very useful to lower levels of management for control purposes. In an ideal situation a short-term budget should perfectly fit into a long-term budget.

## 10. ZERO BASE BUDGETING

Zero base budgeting is a revolutionary concept of planning the future activities and there is a sharp contradiction from conventional budgeting. Zero base budgeting, may be better termed as “*De nova* budgeting” or budgeting from the beginning without any reference to any base-past budgets and actual happening. Zero base budgeting may be defined as “a planning and budgeting process which requires each manager to justify his entire budget request in detail from scratch (hence zero base) and shifts the burden of proof to each manager to justify why he should spend any money at all. The approach requires that all activities be analysed in decision packages which are evaluated by systematic analysis and ranked in order of importance”. CIMA defines zero base budgeting as “a method of budgeting whereby all activities are re-evaluated each time a budget is set. Discrete levels of each activity are valued and a combination chosen to match funds available.”

It is a technique which complements and links the existing planning, budgeting and review processes. It identifies alternative and efficient methods of utilising limited resources in effective attainment of selected benefits. It is a flexible management approach which provides a credible rationale for reallocating resources by focusing on systematic review and justification of the funding and performance levels of current programmes of activities.

The concept of zero base budgeting was developed in U.S.A. Under zero-base budgeting, each programme and each of its constituent part is challenged for its very inclusion in each years budget. Programme objectives are also re-examined with a view to start things afresh. It requires review analysis and evaluation of each programme in order to justify its inclusion or exclusion from final budget. Following steps are usually involved:

- (i) Describing and analysing all current or proposed programmes usually called “decision packages”. This consists of identification, analysis and formulation assists an evaluation in terms of purposes, consequence, performance measures, alternatives and cause and benefits. Decision units are the lowest level programmes or organisational entity for which budgets are prepared.
- (ii) Ranking of decision packages alongwith documents in support of these packages.
- (iii) The sources are allocated in accordance with the ranking.

Zero-base budgeting is based on the premise that every rupee of expenditure requires justification. The traditional budgeting approach includes expenditures of previous year which are automatically incorporated in new budget proposals and only increments are subjected to debate. Zero base budgeting assumes that a responsibility centre manager has had no previous expenditure. Important features of zero-base budgeting are:

- (i) Concentration of efforts is not simply on “how much” a unit will spend but “why” it needs to spend.
- (ii) Choices are made on the basis of what each unit can offer for a specific cost.
- (iii) Individual unit’s objects are linked to corporate targets.

- (iv) Quick budget adjustments can be made if, during the operating year costs are required to maintain expenditure level.
- (v) Alternative ways are considered.
- (vi) Participation of all levels in decision-making.

Following are the points of difference between traditional budgeting and zero base budgeting:

- (i) Traditional budgeting is accounting-oriented. Main stress happens to be on previous level of expenditure. Zero base budgeting makes a decision oriented approach.
- (ii) In traditional budgeting, first reference is made to past level of spending and then demand is made for inflation and new programmes. In zero base budgeting a decision unit is broken into understandable decision packages which are ranked according to importance to enable top management to focus attention only on decision packages which enjoy priority to others.
- (iii) In traditional budgeting, some managers deliberately inflate their budget request so that after the cuts they still get what they want. In zero base budgeting, a rational analysis of budget proposal is attempted.
- (iv) Traditional budgeting is not as clear and responsive as zero base budgeting.
- (v) In traditional budgeting, it is for top management to decide why a particular amount should be spent on a particular decision unit. In zero base budgeting this responsibility is shifted from top management to the manager of decision unit.
- (vi) Traditional budgeting makes a routing approach while zero base budgeting makes a very straight-forward approach and immediately spotlights the decisions packages enjoying priority over others.

*Advantages of zero base budgeting:*

- (i) Zero base budgeting is not based on incremental approach, so it promotes operational efficiency because it require managers to review and justify their activities or the fund requested.
- (ii) Since this system requires participation of all managers, preparation of budgets, responsibility of all levels at management in successful execution of budgetary system can be ensured.
- (iii) This technique is relatively elastic because budgets are prepared every year on a zero base. This system makes it obligatory to develop financial planning and management information system.
- (iv) This system weeds out inefficiency and reduces the cost of production because every budget proposal is evaluated on the basis of cost benefit analysis.
- (v) It provides the organisation with a systematic way to evaluate different operations and programmes undertaken by the management. It enables management to allocate resources according to priority of the programmes.

- (vi) It is helpful to the management in making optimum allocation of scarce resources because a unique aspect of zero base budgeting is the evaluation of both current and proposed expenditure and placing it some order of priority.

*Criticism against zero base budgeting:*

- (1) Defining the decision units and decision packages is rather difficult.
- (2) Zero base budgeting requires a lot of training for managers.
- (3) Cost of preparing the various packages may be very high in large firms involving large number of decision packages.
- (4) It may lay more emphasis on short term benefits to the detriment of long-term objectives of the organisation.
- (5) It will lead to enormous increase in paper work created by the decision packages. The assumptions about costs and benefits in each package must be continually up dated and new packages developed as soon as new activities emerge.
- (6) Where objectives are very difficult to quantify as in research and development, zero base budgeting does not offer any significant control advantage.

## **11. PERFORMANCE BUDGETING**

The concept of performance budgeting relates to greater management efficiency specially in government work. With a view to introducing a system's approach, the concept of performance budgeting was developed and as such there was a shift from financial classification to 'cost' or 'objective' classification. Performance budgeting, is therefore, looked upon as a budget based on functions, activities and projects and is linked to the budgetary system based on objective classification of expenditure.

According to National Institute of Bank Management, Bombay performance budgeting technique is, the process of analysing identifying, simplifying and crystallising specific performance objectives of a job to be achieved over a period in the frame work of the organisational objectives, the purpose and objectives of the job. The technique is characterised by its specific direction towards the business objectives of the organisation. Thus, performance budgeting lays immediate stress on the achievement of specific goals over a period of time. It requires preparation of periodic performance reports. Such reports compare budget and actual data and show any existing variances.

The purpose of performance budgeting is to focus attention upon the work to be done, services to be rendered rather than things to be spent for or acquired. In performance budgeting, emphasis is shifted from control of inputs to efficient and economic management of functions and objectives. Performance budgeting takes a system view of activities by trying to associate the inputs of the expenditure with the output of accomplishment in terms of services, benefits etc. In performance budgeting, the objectives of the budget makers and setting the task and sub-task for accomplishment of the defined objectives are to be clearly decided well in advance before budgetary allocations of inputs are made. Each homogenous function is broken down into a number of subordinate functions.

The main purposes of performance budgeting are:

1. To review at every stage, and at every level of the organisation, so as to measure progress towards the short-term and long-term objectives.
2. To inter-relate physical and financial aspects of every programme, project or activity.
3. To facilitate more effective performance audit.
4. To assess the effects of the decision-making of supervisor to the middle and top-managers.
5. To bring annual plans and budgets in line with the short and long-term plan objectives.
6. To present a comprehensive operational document showing the complete planning fabric of the programmes and prospectus their objectives interwoven with the financial and physical aspects.

A performance budget presents estimate for expenditure and earnings in terms of functions, programmes, activities and projects. For introducing performance budgeting financial requirements are put up in relation to:

- (a) Programmes and outlay indicating the range of work to be done by each categorised agency.
- (b) Object-wise classification showing objects of expenditure, e.g. office establishment, etc. is usually shown in the conventional budgets.
- (c) Sources of financing.

However, performance budgeting has certain limitations such as difficulty in classifying programmes and activities, problems of evaluation of various schemes, relegation to the background of important programmes. Moreover, the technique enables only quantitative evaluation scheme and sometimes the needed results cannot be measured.

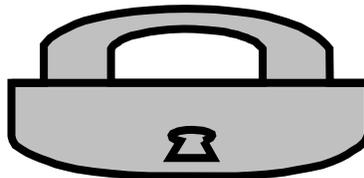
#### LESSON ROUND UP



- A budget is a precise statement of the financial and quantitative implications of the course of action that management has decided to follow in the immediate next period of time (usually a year).
- Budgetary control is the establishment of budgets, relating the responsibilities of executive to the requirements of a policy and the continuous comparison of actual with budgeted results either to secure by individual action the objectives of that policy or to provide a firm basis for its revision.

- Budget manual is a document which sets out the responsibilities of the persons engaged in the routine of and the forms and records required for budgetary control.
- Budget key factor also known as limiting factor, governing factor or principal budget means the factor which limits the size of output. It is the factor the extent whose influence must first be assessed in order to ensure that functional budgets are capable of fulfillment. The influencing factors are: (a) customer demand, (b) plant capacity (c) availability of raw material, skilled labour and capital, (d) availability of accommodation for plant, raw materials and finished goods and (e) governmental restrictions, etc.
- Fixed budget is a budget designed to remain unchanged irrespective of the level of activity actually attained.
- A flexible budget is a budget which is designed to change in relation to the level of activity attained.
- Zero base budgeting is a method of budgeting whereby all activities are re-evaluated each time a budget is set. Discrete levels of each activity are valued and a combination chosen to match funds available. It is a system whereby each budget item, regardless of whether it is new or existing must be justified in its entirety each time a new budget is prepared.
- Performance budgeting involves evaluation of performance of an organization in the context of both specific as well as overall objectives of the organization. Performance budgeting lays emphasis on achievement of physical targets.

### SELF TEST QUESTIONS



1. What is budgetary control? Discuss the various preliminaries required for adoption of a system of budgetary control.
2. What are the main steps in budgetary control? State the main objectives of budgetary control.
3. What factors generally determine a budget period? Give examples?
4. Distinguish between fixed budget' and flexible budget'.
5. What do you understand by master budget? Into what sections is it usually divided, and what are the purposes of the divisions?
6. Name the different types of budgets that are built up for effective control.
7. What is a budget report? State the matters that should be incorporated in a good report. How does it assist the management?
8. What is a principal budget factor? Give a list of such principal budget

factors' and state the effect of the existence of two or more budget factors in a business.

9. Write a note on (i) zero base budget and (ii) performance budget.
10. ABC Ltd. a newly started company wishes to prepare cash budget from January. Prepare a cash budget for the first six months from the following estimated revenue and expenses.

Month	Total Sales ₹	Materials ₹	Wages ₹	Overheads	
				Production ₹	Selling & Distribution ₹
Jan.	20,000	20,000	4,000	3,200	800
Feb.	22,000	14,000	4,400	3,300	900
March	28,000	14,000	4,600	3,400	900
April	36,000	22,000	4,600	3,500	1,000
May	30,000	20,000	4,000	3,200	900
June	40,000	25,000	5,000	3,600	1,200

Cash balance on 1st January was ₹10,000. New machinery is to be installed at ₹20,000 on credit, to be repaid by two equal instalments in March and April.

Sales commission at @ 5% on total sales is to be paid within a month following actual sales.

₹10,000 being the amount of 2nd call may be received in March. Share premium amounting to ₹2,000 is also obtainable with the 2nd call.

Period of credit allowed by suppliers	-	2 months
Period of credit allowed to customers	-	1 month
Delay in payment of overheads	-	1 month
Delay in payment of wages	-	1/2 month

Assume cash sales to be 50% of total sales.

[Ans. Closing balances: Jan. ₹18,000; Feb. ₹29,800; March ₹27,000; April ₹24,700; May ₹33,100; June ₹36,000].

11. The cost of an article at capacity level of 5,000 units is given under A below. For a variation of 25% in capacity above or below this level, the individual expenses vary as indicated under B below:

	A	B
	₹	
Material cost	25,000 (100% varying)	
Labour cost	15,000 (100% varying)	
Power	1,250 (80% varying)	
Repairs and maintenance	2,000 (75% varying)	
Stores	1,000 (100% varying)	
Inspection	500 (20% varying)	

Depreciation	10,000	(100% fixed)
Administration overheads	5,000	(25% varying)
Selling overheads	<u>3,000</u>	(50% varying)
	<u>62,750</u>	
Cost per unit	12.55	

Find the unit cost of the product under each individual expense at production levels of 4,000 units and 6,000 units.

[Ans. Total cost per unit - 4,000 units - ₹13.37; 5,000 units ₹12.55; 6,000 units - ₹12].

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**Solution:****M/s Novan Television Company  
Cash Budget for six months, January to June, 2008**

	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
	₹	₹	₹	₹	₹	₹
Receipts:						
Cash sales	1,50,000	2,00,000	2,00,000	3,00,000	2,50,000	2,00,000
Collections from debtors	<u>11,25,000</u>	<u>7,35,000</u>	<u>6,15,000</u>	<u>5,85,000</u>	<u>7,80,000</u>	<u>7,80,000</u>
Total Receipts (A)	<u>12,75,000</u>	<u>9,35,000</u>	<u>8,15,000</u>	<u>8,85,000</u>	<u>10,30,000</u>	<u>9,80,000</u>
Payments:						
Purchases	6,40,000	6,40,000	9,60,000	8,00,000	6,40,000	9,60,000
Rent	8,000	8,000	8,000	8,000	8,000	8,000
Wages and Salaries	1,20,000	1,60,000	2,00,000	2,00,000	1,60,000	1,40,000
Excise Deposit	—	—	—	2,00,000	—	—
Capital Expenditure	—	—	—	—	—	1,20,000
Interest	—	—	<u>30,000</u>	—	—	<u>30,000</u>
Total Payment (B)	<u>7,68,000</u>	<u>8,08,000</u>	<u>11,98,000</u>	<u>12,08,000</u>	<u>8,08,000</u>	<u>12,58,000</u>
Balance:						
Net Cash Receipts (A - B)	5,07,000	1,27,000	(3,83,000)	(3,23,000)	2,22,000	(2,78,000)
Cash balance at the beginning of the month	<u>4,00,000</u>	<u>9,07,000</u>	<u>10,34,000</u>	<u>6,51,000</u>	<u>4,00,000</u>	<u>5,50,000</u>
Total	9,07,000	10,34,000	6,51,000	3,28,000	6,22,000	2,72,000
Borrowing/(Surplus)	—	—	—	72,000	(72,000)	1,28,000
Cash balance at the close of the month	<u>9,07,000</u>	<u>10,34,000</u>	<u>6,51,000</u>	<u>4,00,000</u>	<u>5,50,000</u>	<u>4,00,000</u>

**Note** : It is assumed that the company will maintain cash balance of ₹ 4,00,000 as in the beginning of the budget period, resorting to borrowing, if necessary. The company could also place substantial amounts on short duration deposits, of 15 to 30 days during the first three months.

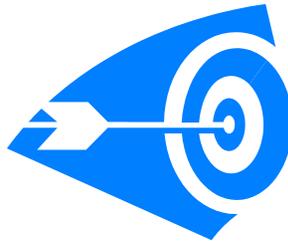
**Working Note:**

	<i>Oct. 2007</i>	<i>Nov. 2007</i>	<i>Dec. 2007</i>	<i>Jan. 2008</i>	<i>Feb. 2008</i>	<i>March 2008</i>	<i>April 2008</i>	<i>May 2008</i>	<i>June 2008</i>
	₹	₹	₹	₹	₹	₹	₹	₹	₹
Total Sales	12,00,000	14,00,000	16,00,000	6,00,000	8,00,000	8,00,000	12,00,000	10,00,000	8,00,000
Credit Sales	<u>9,00,000</u>	<u>10,50,000</u>	<u>12,00,000</u>	<u>4,50,000</u>	<u>6,00,000</u>	<u>6,00,000</u>	<u>9,00,000</u>	<u>7,50,000</u>	<u>6,00,000</u>
Collections:									
1st month, 60%				7,20,000	2,70,000	3,60,000	3,60,000	5,40,000	4,50,000
2nd month, 30%				3,15,000	3,60,000	1,35,000	1,80,000	1,80,000	2,70,000
3rd month, 10%				90,000	1,05,000	1,20,000	45,000	60,000	60,000
				<u>*11,25,000</u>	<u>7,35,000</u>	<u>6,15,000</u>	<u>5,85,000</u>	<u>7,80,000</u>	<u>7,80,000</u>

\* For example: 60% of credit sales in December 2007;  
30% of credit sales in November 2007; and  
10% of credit sales in October 2007.

STUDY XIV  
**MARGINAL COSTING**

**LEARNING OBJECTIVES**



- To understand the concept of marginal costing.
- Determine profit under marginal costing and absorption costing.
- Distinguish between marginal costing and absorption costing.
- Understand the practical application of marginal costing.
- Explain the situation where the price of a product can be fixed below marginal cost.
- Understand the meaning and application of cost volume-profit analysis.
- Calculate break-even point and prepare break-even charts.
- Understand the meaning of margin of safety.

**1. MARGINAL COSTING**

Marginal costing is a costing method in which only variable costs are accumulated and cost per unit is ascertained only on the basis of variable costs. Prime costs and variable factory overheads are used to value inventories. Fixed costs tend to vary with time, such as salaries and rent, rather than level of output and variable costs tend to change in total with increase or decrease in the level of activity, e.g., materials, power etc. Fixed costs which are by and large uncontrollable, are not taken into account under marginal costing while ascertaining per unit cost but they are not ignored. It should be borne in mind that variable cost per unit are fixed and fixed costs per unit are variable with changes in level of output. Marginal costing is otherwise known as variable costing. The CIMA has defined marginal cost as “the cost of one unit of product or service which would be avoided if that unit were not produced or provided.” Marginal costing is defined as “the accounting system in which variable costs are charged to cost units and fixed costs of the period are written-off in full against the aggregate contribution. Its special value is in decision-making.” It is a technique of applying the existing methods in a particular manner in order to bring out the relationship between profit and volume of output.

Marginal costing and direct costing are often treated as interchangeable terms. Profit is measured by deducting fixed costs from the total contribution. *Contribution or gross margin* is the difference between sales and the marginal cost of sales. Marginal costing assumes that the contribution provides a pool out of which fixed cost

is met; any surplus being the profit or net margin. Contribution margin is also termed as marginal income, variable gross margin, profit contribution or contribution to fixed costs.

The main features of marginal costing are the following:

- (a) Costs are separated into the fixed and variable elements and semi-variable costs are also differentiated like wise.
- (b) Only the variable costs are taken into account for computing the value of stocks of work-in-progress and finished products.
- (c) Fixed costs are charged off to revenue wholly during the period in which they are incurred and are not taken into account for valuing product cost/inventories.
- (d) Prices may be based on marginal costs and contribution but in normal circumstances prices would cover costs in total.
- (e) It combines the techniques of cost recording and cost reporting.
- (f) Profitability of departments or products is determined in terms of marginal contribution.
- (g) The unit cost of a product means the average variable cost of manufacturing the product.

## 2. CONTRIBUTION

If a system of marginal costing is operated in an organisation with more than one product, it will not be possible to ascertain the net profit per product because fixed overheads are charged in total to the profit and loss account rather than recovered in product costing. The contribution of each product is charged to the firm's total fixed overheads and profit is ascertained. As stated earlier, contribution is the difference between selling price and variable cost of sales. It is visualised as some sort of a fund or pool, out of which all fixed costs, irrespective of their nature are to be met, and to each product has to contribute its share. The excess of contribution over fixed costs is the profit. If the total contribution does not meet the entire fixed cost, there will be loss.

In normal circumstances, selling prices contain an element of profit but there may be circumstances, when products may have to be sold at cost or even at loss. Therefore, the character of contributions will have the following composition under different circumstances:

- (i) Selling price containing profit:  
Contribution = Fixed cost + Profit
- (ii) Selling price at cost:  
Contribution = Fixed cost
- (iii) Selling price at loss:  
Contribution = Fixed cost – Loss

## 3. DETERMINATION OF PROFIT UNDER MARGINAL AND ABSORPTION COSTING

Under marginal costing, only factory overheads costs that tend to vary with

volume are charged to product cost in addition to prime cost. While evaluating inventory only direct materials, direct labour and variable factory overhead are included and are considered as product costs. Fixed factory overhead under direct or marginal costing is not included in inventory. It is treated as a period cost and charged against revenue when incurred. Under absorption costing, sometimes called full or conventional costing, all manufacturing costs, both fixed and variable are charged to product costs. Thus Absorption costing is “a principle whereby fixed as well as variable costs are allotted to cost units”. It means a system under which cost per unit includes fixed expenses, especially fixed production overheads in addition to the variable cost.

Profit emerges only after charging all costs - fixed and variable. In marginal costing also this is true; only profit is ascertained by charging the fixed expenses costs to contribution.

Contribution is the difference between selling price and marginal costs. Fixed costs are written off against contribution during the period. Thus:

$$\text{Selling price} - \text{Variable cost} = \text{Contribution}$$

$$\text{Contribution} - \text{Fixed costs} = \text{Profit}$$

If profit and fixed costs are known,

$$\text{Fixed costs} + \text{Profit} = \text{Contribution}$$

This gives us a basic marginal equation:

$$\text{Sales} - \text{Marginal costs} = \text{Contribution} = \text{Fixed costs} + \text{Profit (if there is a profit)} \text{ or } \text{Sales} = \text{Marginal costs} + \text{Fixed costs} + \text{Profit.}$$

Since the closing stocks do not have any element of fixed costs, profit shown by marginal costing technique may be different from that shown by absorption costing. When the entire stock is sold, there is no inventory i.e., neither there is opening nor closing stock, the profit revealed by both the methods will be same. But when sales and production are out of balance, difference in net profit is reported. When absorption costing is applied, the fixed manufacturing costs are shifted from one year to another year as a part of the inventory cost i.e. stock. If a company produces more than it sells in a given period, not all of the current manufacturing overheads will be deducted from sales i.e., closing stock will include a portion of fixed overheads. In other words, in absorption costing inventory will be valued at a higher figure; therefore, profit will be more as revealed by absorption costing than marginal costing. Hence, profits will not necessarily increase with an increase in sale value. The position will be reverse, in case a company produces less than it sells in a given period. Thus, marginal costing can produce a net profit figure which is similar than or greater than or equal to the net profit as shown under absorption costing.

An example illustrating the variations in the results obtained under the two methods is given below:

The basic production data are:

Normal volume of production = 19,500 units per period

Sale price - ₹ 4 per unit

Variable cost - ₹ 2 per unit

Fixed cost - ₹ 1 per unit

Total fixed cost = ₹19,500 (₹1 x 19,500 units, normal)

Selling and distribution costs have been omitted.

The opening and closing stocks consist of both finished goods and equivalent units of work-in-progress.

The profit and loss calculated under the two methods for the various periods are as follows:

	<i>Period I</i>	<i>Period II</i>	<i>Period III</i>	<i>Period IV</i>	<i>Total</i>
Opening stock units	—	—	4,500	1,500	—
Production units	19,500	22,500	18,000	22,500	82,500
Sales units	19,500	18,000	21,000	24,000	82,500
Closing stock units	—	4,500	1,500	—	—
<i>Marginal Costing Method</i>					
Sales	78,000	72,000	84,000	96,000	3,30,000
Direct cost:					
Opening stock					
@ ₹ 2 per unit	—	—	9,000	3,000	—
Variable cost					
@ ₹ 2 per unit	39,000	45,000	36,000	45,000	1,65,000
Closing stock					
@ ₹ 2 per unit	—	9,000	3,000	—	—
Cost of goods sold	39,000	36,000	42,000	48,000	1,65,000
Contribution	39,000	36,000	42,000	48,000	1,65,000
Fixed cost	19,500	19,500	19,500	19,500	78,000
Profit	19,500	16,500	22,500	28,500	87,000
<i>Absorption Costing Method</i>					
Sales	78,000	72,000	84,000	96,000	3,30,000
Opening stock					
@ ₹ 3 per unit	—	—	13,500	4,500	—
Cost of production					
@ ₹ 3 per unit	58,500	67,500	54,000	67,500	2,47,500
Less: Cost of closing stock					
@ ₹ 3 per unit	—	13,500	4,500	—	—
Cost of sales (actual)	58,500	54,000	63,000	72,000	2,47,500
Less: Over-absorbed fixed cost					
cost	—	3,000	—	3,000	6,000
Add: Under-absorbed fixed cost	—	—	1,500	—	1,500
Profit	19,500	21,000	19,500	27,000	87,000

The above example reveals the following features:

- (i) Since there is no opening or closing stock in the accounting period I, the profit under the marginal costing and absorption costing methods is the same. Production being at the normal level, there is no under or over-absorption of the fixed costs under the absorption costing method. Marginal costing does away with the problem of over-absorption or under-absorption of fixed overheads.
- (ii) In the accounting period II, the marginal costing method shows a profit of ₹16,500 and as against this, the absorption costing method shows profit of ₹21,000. Under the absorption costing method, a portion of the fixed cost, instead of being charged against the profit for the period is charged to the closing stock and carried over to the next period.
- (iii) In the accounting period III, the profit calculated in absorption costing is less than that of marginal costing. This is because when sales exceeds output, a portion of the fixed cost carried over as part of the opening stock under absorption costing, is charged to the product sold in the current period.
- (iv) In the accounting period IV, the profit shown under the absorption costing system is lesser than under the marginal costing system. This is because the fixed cost pertaining to the opening stock of 1,500 units now sold is brought over to the current accounting period.
- (v) In the long run when sales and output tend to equate, there is no difference or very little difference in the results under the two methods. In the example above the net profit for the four accounting periods taken together are the same under both the methods.

The relationship shown above may be summarised as follows:

- (i) When output is equal to sales i.e. with no opening or closing stock the profit under absorption costing and marginal costing is equal;
- (ii) When output is less than sales i.e. closing stock is less than opening stock, the profit under marginal costing is greater than the profit under absorption costing;
- (iii) When output is greater than sales i.e. closing stock is more than the opening stock, the profit under the marginal costing is less than the profit under absorption costing.

The differences between the profits revealed by absorption costing and marginal costing can be computed with the help of the following formula:

$$= \frac{\text{Fixed factory overheads}}{\text{Denominator used for utilizing Fixed overheads}} \times (\text{Volume produced} - \text{Volume sold})$$

Or

$$= (\text{Fixed factory overheads per unit}) \times (\text{Change in inventory units})$$

Analysis regarding the net operating income under absorption costing and marginal costing presented above, although often correct, is not universally valid.

The net operating income under both the methods of costing can be analysed in relation to four methods of inventory costing: Average costing, FIFO, LIFO and

Standard costing. This would show that the usual generalisations about full and direct costing hold good only under the LIFO and standard costing methods. Further, under the LIFO and the average costing methods, the results are more complex than those considered by the usual generalisations which therefore do not apply.

In absorption costing the effects of sales and production are combined, in marginal costing on the other hand, the emphasis is placed on sales. The cost of one unit of product manufactured is not effected due to the changes in the level of activities. The variable costs of a unit is assumed to remain constant over certain ranges of output though both unit variable costs and total fixed cost may change at certain levels of production. The data used for marginal costing applied to a range of output at which variable costs and total fixed costs are relatively constant. Variable costs serve as a useful tool in bringing out relationships between price, cost and volumes. But reliance on variable costing system may make the management think that the company can operate profitably at low contribution margin, only to find that profit does not come up to expectations.

Selling below the normal price may help on short term but in the long run this may result in margins that are not sufficient in relation to resources invested. Thus, both costing method can be useful when applied to appropriate circumstances.

### Illustration 1

A company makes and sells a single product. At the beginning of period 1, there is no opening stock of the product, for which the variable production cost is ₹4 and the sale price is ₹6 per unit. Fixed costs are ₹2,000 per period of which ₹1,500 are fixed production costs.

The following details are available:

	<i>Period 1</i>	<i>Period 2</i>
Sales	1,200 units	1,800 units
Production	1,500 units	1,500 units

What would be the profit in each period using -

- absorption costing. (Assume normal output is 1,500 units per period); and
- marginal costing?

### Solution:

#### (a) Absorption Costing Method

The absorption rate for fixed production overhead is:

$$\frac{\text{₹ } 1500}{1,500} \text{ units} = \text{₹ } 1 \text{ per unit}$$

	<i>Period 1</i>		<i>Period 2</i>		<i>Total</i>	
	₹	₹	₹	₹	₹	₹
Sales		7,200		10,800		18,000
Production costs						
Variable @ ₹ 4	6,000		6,000		12,000	

Fixed @ ₹1	<u>1,500</u>		<u>1,500</u>	<u>3,000</u>
₹5	<u>7,500</u>		<u>7,500</u>	<u>15,000</u>
Add: Opening stock	<u>—</u>		<u>1,500</u>	<u>—</u>
	<u>7,500</u>		<u>9,000</u>	
Less: Closing stock (300 units @ ₹5)	<u>1,500</u>			
	<u>—</u>			
Production cost of sales	<u>6,000</u>		<u>9,000</u>	<u>15,000</u>
Other costs	<u>500</u>		<u>500</u>	<u>1,000</u>
Total cost of sales		<u>6,500</u>		<u>9,500</u>
			<u>1,300</u>	<u>2,000</u>
Profit		<u>700</u>		<u>2,000</u>

**(b) Marginal Cost Method:**

	Period 1		Period 2		Total
	₹	₹	₹	₹	₹
Sales		<u>7,200</u>		<u>10,800</u>	<u>18,000</u>
Variable production Cost	<u>6,000</u>		<u>6,000</u>		<u>12,000</u>
Add: Opening stock	<u>—</u>		<u>1,200</u>		<u>—</u>
	<u>6,000</u>		<u>7,200</u>		<u>12,000</u>
Less: Closing stock	<u>1,200</u>		<u>—</u>		<u>—</u>
Variable production cost of sales		<u>4,800</u>		<u>7,200</u>	<u>12,000</u>
Contribution		<u>2,400</u>		<u>3,600</u>	<u>6,000</u>
Fixed cost		<u>2,000</u>		<u>2,000</u>	<u>4,000</u>
Profit		<u>400</u>		<u>1,600</u>	<u>2,000</u>

**4. DIFFERENCE BETWEEN ABSORPTION COSTING AND MARGINAL COSTING**

	<i>Absorption costing</i>	<i>Marginal costing</i>
(i)	Fixed production overheads are charged to the product to be subsequently released as a part of goods sold i.e., it is included in cost per unit.	Fixed production costs are regarded as period cost and are charged to revenue along with the selling and administration expenses, i.e., they are not included while computing cost per unit.
(ii)	Profit is the difference between sales and cost of goods sold.	Profit in marginal costing is ascertained by establishing the total contribution and then deducting therefrom the total fixed expenses. Contribution is the excess of sales over variable cost.
(iii)	Costs are seldom classified into variable and fixed. Although such a classification is possible, it fails to establish a cost-volume profit relationship.	Cost-volume profit relationship is an integral part of marginal costing studies. Costs have to be classified into fixed costs and variable costs.

- |      |  |  |
|------|--|--|
| (iv) | If inventories increase during a period, this method will reveal more profit than marginal costing. When inventories decrease, less profits are reported because under this method closing stock is valued at higher figures. Since inventories are valued at total cost, a portion of fixed overheads are also included in inventories. | If inventories increase during a period, this method generally reports less income than absorption costing; but when inventories decrease this method reports more net income. The difference in the net income is due to difference in accounting for fixed manufacturing costs as compared to inventory valuation. |
| (v)  | Arbitrary apportionment of fixed costs may result in under or over recovery of overheads.  | Since fixed costs are excluded, there is no question of arbitrary apportionment of fixed overheads and thus under or over absorption of overheads.   |
- 

## 5. ADVANTAGES OF MARGINAL COSTING

- (1) Cost-volume-profit relationship data wanted for profit planning purposes is readily obtained from the regular accounting statements. Hence management does not have to work with two separate sets of data to relate one to the other.
- (2) The profit for a period is not affected by changes in absorption of fixed expenses resulting from building or reducing inventory. Other things remaining equal (e.g. selling prices, costs, sales mix), profits move in the same direction as sales when direct costing is in use.
- (3) Manufacturing cost and income statements in the direct cost form follow management's thinking more closely than does the absorption cost form for these statements. For this reason, management finds it easier to understand and use direct cost reports.
- (4) The impact of fixed costs on profits is emphasised because the total amount of such cost for the period appears in the income statement.
- (5) Marginal income figures facilitate relative appraisal of products, territories, classes of customers, and other segments of the business without having the results obscured by allocation of joint fixed costs.
- (6) Marginal costing lies in with such effective plans for cost control as standard costs and flexible budgets.
- (7) Marginal costing furnishes a better and more logical basis for the fixation of sales prices as well as tendering for contracts when business is at low ebb.
- (8) Last but not the least, break-even point can be determined only on the basis of marginal costing.

## 6. LIMITATIONS OF MARGINAL COSTING

Marginal costing technique has the following limitations:

- (1) In marginal costing, costs are classified into fixed and variable. Segregation of costs into fixed and variable is rather difficult and cannot be done with precision.

- (2) Marginal costing assumes that the behaviour of costs can be represented in straight line. This means that fixed costs remains completely fixed over a period at different levels and variable costs change in linear pattern i.e. the change is proportion to the change in volume. In real life, fixed costs are liable to change at varying levels of production especially when extra plant and equipments are introduced and hence variable costs may not vary in the same proportion as the volume.
- (3) Under marginal costing technique fixed costs are not included in the value of stock of finished goods and work-in-progress. As fixed costs are incurred, these should also form part of the costs of the product. Due to this elimination of fixed costs from finished stock and work-in-progress, the stocks are understated. This affects the results of profit and loss account and the balance sheet. Thus, profit may be unnecessarily deflated.
- (4) In the marginal costing system monthly operating statements will not be as realistic or useful as under the absorption costing system. This is because under this system, marginal contribution and profits vary with change in sales value. Where sales are occasional, profits fluctuate from period to period.
- (5) Marginal costing fails to give complete information, for example rise in production and sales may be due to extensive use of existing machinery or by expansion of the resources or by replacement of the labour force by machines. The marginal contribution of P/V ratio fails to bring out reasons for this.
- (6) Under marginal costing system the difficulties involved in the apportionment and computation of under and over absorption of fixed overheads are done away with but problem still remains as far as the under absorption or over absorption of variable overheads is concerned.
- (7) Although for short term assessment of profitability marginal costs may be useful, long-term profit is correctly determined on full costs basis only.
- (8) Marginal costing does not provide any standard for the evaluation of the performance. Marginal contribution data do not reveal many effects which are furnished by variance analysis. For example, efficiency variance reflects the efficient and inefficient use of plant, machinery and labour and this sort of valuation is lacking in the marginal cost analysis.
- (9) Marginal costing analysis assumes that sales price per unit will remain the same on different levels of production but these may change in real life and give unrealistic results.
- (10) In the age of increased automation and technology advancement, impact of fixed costs on product is much more than that of variable costs. As a result a system that does not account the fixed costs is less effective because a substantial portion of the cost is not taken into account.
- (11) Selling price under the marginal costing technique is fixed on the basis of contribution. This may not be possible in the case of cost plus contracts.

Thus the above limitations indicate that fixed costs are equally important in certain cases.

## 7. APPLICATIONS OF MARGINAL COSTING

### 7.1 Profit planning

There are four ways in which profit performance of a business can be improved:

- (a) by increasing volume;
- (b) by increasing selling price;
- (c) by decreasing variable costs; and
- (d) by decreasing fixed costs.

Profit planning is the planning of future operations to attain maximum profit or to maintain a specified level of profit. The contribution ratio (which is the ratio of marginal contribution to sales) indicates the relative profitability of the different sectors of the business whenever there is a change in selling price, variable costs or product mix. Due to the merging together of fixed and variable costs, absorption costs fail to bring out correctly the effect of any such change on the profit of the concern.

#### Illustration 2

A toy manufacturer makes an average net profit of ₹2.50 per piece on a selling price of ₹14.30 by producing and selling 60,000 pieces or 60% of the potential capacity. His cost of sales is:

Direct material	₹3.50
Direct wages	₹1.25
Works overhead	₹6.25 (50% fixed)
Sales overhead	₹0.80 (25% variable)

During the current year, he anticipates that his fixed charges will go up by 10%, while rates of direct material and direct labour will increase by 6% and 8% respectively. But he has no option of increasing the selling price. Under this situation he obtains an offer for an order equal to 20% of his capacity. The concerned customer is a special customer.

What minimum price will you recommend for acceptance to ensure the manufacturer an overall profit of ₹1,67,300?

#### Solution:

	<i>Previous Year</i>		<i>Budget for current year prior to acceptance of 20% excess orders</i>	
	<i>Per piece</i>	<i>Amount</i>	<i>Per piece</i>	<i>Amount</i>
	₹	₹	₹	₹
Sales	<u>14.30</u>	<u>8,58,000</u>	<u>14.30</u>	<u>8,58,000</u>
Variable cost:				
Direct material	3.500		3.710	
Direct labour	1.500		1.350	

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Variable works overhead	3.125		3.125	
Variable sales overhead	<u>0.200</u>		<u>0.200</u>	
	8.075	4,84,500	8.385	5,03,100
Contribution	<u>6.225</u>	3,73,500		3,54,900
Fixed cost:				
Works overhead	1,87,500		2,06,250	
Sales overhead	<u>36,000</u>	<u>2,23,500</u>	<u>39,600</u>	<u>2,45,850</u>
Profit		1,50,000		1,09,050

Marginal cost of additional 20,000 units: ₹1,67,700  
(₹20,000 x ₹8.385)

Increased contribution required = ₹1,67,300 – ₹1,09,050 = ₹58,250

Total sales price expected for 20,000 units = ₹1,67,700 + ₹58,250  
= ₹2,25,950

Sales price per unit =  $\frac{₹ 2,25,950}{20,000} = ₹11.297$

**Note:** Such concessional price is acceptable only for special markets (e.g., export market) or special customers like government and only if idle capacity exists.

### Illustration 3

The following data relate to a manufacturing company:

Plant capacity: 4,00,000 units per annum

Present utilisation: 40%

Actuals for the year were:

Selling price	₹ 50 per unit
Materials cost	₹ 20 per unit
Variable manufacturing costs	₹ 15 per unit
Fixed costs	₹ 27 lakhs

In order to improve capacity utilisation the following proposals are being considered:

Reduce selling price by 10%.

Spend additionally ₹3 lakhs on sales promotion.

How many units should be made and sold in order to earn a profit of ₹5 lakhs per year?

#### Solution:

Revised selling price (₹50 less 10%)	₹45 per unit
Variable cost:	
Material cost	₹20
Variable manufacturing cost (per unit)	₹15
Total variable cost	₹35 per unit
Contribution	₹10 per unit

Total contribution required:

Fixed costs	₹ 27,00,000
Additional promotion expenses	₹ 3,00,000
Profit	₹ <u>5,00,000</u>
	₹ <u>35,00,000</u>

Total number of units to be made and sold to earn a contribution of ₹35,00,000

$$= \frac{\text{Total Contribution}}{\text{Contribution per unit}}$$

$$= \frac{\text{₹ } 35,00,000}{\text{₹ } 10} = 3,50,000 \text{ units.}$$

## 7.2 Evaluation of Performance

The various section of a concern such as a department, a product line, or a particular market or sales division, have different revenue earning potentialities. A company always concentrates on the departments or product lines which yield more contribution than others. The performance of each such sector can be brought out by means of cost volume-profit analysis or the contribution approach. The analysis will help the company to take decision that will maximise the profits.

### Illustration 4

A business produces three products A, B and C for which the standard variable costs and budgeted selling prices are as follows:

	A	B	C
	₹	₹	₹
Direct Material	3	6	8
Direct Wages	4	4	10
Variable overhead	3	5	7
Selling price	18	25	48

In two successive periods, sales are as follows:

	A	B	C
	Units	Units	Units
Period I	10,000	10,000	10,000
Period II	20,000	13,000	5,000

The budgeted fixed overheads amounted to ₹1,35,000 for each period. In spite of increased sales the profit for the second period has fallen below that of the 1st period.

Present figures to management to show why this fall in profit should, or should not have occurred.

### Solution:

	Product A		Product B		Product C		Total	
Sales (units)	10,000	20,000	10,000	13,000	10,000	5,000	30,000	38,000
(₹ 000)								
Sales (value)	<u>180</u>	<u>360</u>	<u>250</u>	<u>325</u>	<u>480</u>	<u>240</u>	<u>910</u>	<u>925</u>
Variable cost	100	200	150	195	250	125	500	520

Contribution	80	160	100	130	230	115	410	405
Fixed overhead							<u>135</u>	<u>135</u>
Net Profit							<u>275</u>	<u>270</u>
Marginal Contribution Ratio (%)	A: 44.4		B: 40.0		C: 47.9			

*Comments:* Sales have increased by 8,000 units but the sales value has increased by ₹15,000. Marginal costs have increased by ₹20,000 to meet cost of increased units of production, resulting in the fall of profit by ₹5,000.

Product C which yields the highest percentage of contribution to sales is the most profitable line. Product A comes next and product B is the least profitable of the three.

The unsatisfactory position in Period II is because of unfavourable sales mix as the production of most profitable line C has been cut down and the less profitable products A and B have been pushed up.

### 7.3 Make or Buy Decisions

When the management is confronted with the problem whether it would be economical to purchase a component or a product from outside sources, or to manufacture it internally, marginal cost analysis renders useful assistance in the matter. Under such circumstances, a misleading decision would be taken on the basis of the total cost analysis. In case the proposal is to buy from outside then, what is already being made, and the price quoted by the outsider should be lower than the marginal cost. If the proposal is to make something what is being purchased outside, the cost of making should include all additional costs like depreciation on new plant, interest on capital involved and that cost should be compared with the purchase price.

#### Illustration 5

A T.V. manufacturing company finds that while it costs to make component X, the same is available in the market at ₹5.75 each, with all assurance of continued supply. The breakdown of cost is:

Materials	₹ 2.75 each
Labour	₹ 1.75 each
Variable overheads	₹ <u>0.50 each</u>
Depreciation and other fixed cost	₹ <u>1.25 each</u>
	₹ 6.25 each

- Should the company make or buy the component?
- What should be your decision if the supplier offered component at ₹4.85 each?

#### Solution:

*Marginal cost per unit of component X*

Materials	₹ 2.75
Labour	₹ 1.75
Variable overheads	₹ <u>0.50</u>
	₹ <u>5.00</u>

- (a) The purchase cost of the above component is ₹5.75 each. If the company is having spare capacity which can not be filled with more remunerative jobs, it is recommended that the above component be manufactured in the company since the marginal cost at ₹5.00 each is less than the purchase cost of ₹5.75.
- (b) In the event of purchase cost of ₹4.85 each being less than the marginal cost of ₹5.00 each, it is recommended that the component be bought from the supplier as this results in a saving of ₹0.15 each. The spare capacity thus available can be utilised for other purposes, as far as possible.

#### 7.4 Closure of a Department or Discontinuance of a Product

As discussed earlier, marginal costing technique helps in deciding the profitability of a product. It provides the information in a manner that tells us how much each product contributes towards fixed cost and profit; the product or department that gives least contribution should be discarded except for a short period. If the management is to choose some product out of the given ones, then the products giving the highest contribution should be chosen and those giving the least should be discontinued.

#### 7.5 Maintaining a Desired Level of Profit

A company has to cut prices of its products from time to time because of competition, Government regulations and other compelling reasons. The contribution per unit on account of such cutting is reduced while the industry is interested in maintaining a minimum level of its profits. In case the demand for the company's product is elastic, the maximum level of profits can be maintained by pushing up the sales. The volume of such sales can be found out by marginal costing techniques.

#### Illustration 6

S. Ltd. manufactures and markets a single product. The following information is available:

	₹ per unit
Materials	8.00
Conversion costs (variable)	6.00
Dealer's margin	2.00
Selling price	20.00
Fixed cost ₹2,50,000	
Present sales, 80,000 units	
Capacity utilisation: 60 per cent.	

There is acute competition. Extra efforts are necessary to sell. Suggestions have been made for increasing sales:

- (i) By reducing sales price by 5%
- (ii) By increasing dealers margin by 25% over the existing rate.

Which of the two suggestions you would recommend if the company desires to maintain the present profit? Give reasons.

**Solution:***Present marginal cost per unit:*

	<u>₹</u>
Material	8.00
Conversion costs	6.00
Dealer's margin	<u>2.00</u>
Total	<u>16.00</u>
Contribution per unit = Selling price – Marginal cost	
	= ₹20.00 – 16.00 = ₹4.00
Total contribution	= ₹4 × 90,000 = 3,60,000
Profit	= Contribution – Fixed cost
	= ₹3,60,000 – ₹2,50,000 = ₹1,10,000

Since in both suggestions fixed costs remain unchanged, the present profit can be maintained by keeping the total contribution at the present level i.e. ₹3,60,000.

(i) Reducing sales price by 5%

New sales price = (₹20.00 – ₹1.00) = ₹19.00

New dealers margin = 10% of ₹19.00

= ₹1.90

Variable costs = ₹8 + ₹6 + ₹1.90 = ₹15.90

Contribution per unit = ₹19.00 – ₹15.90 = ₹3.10

Sales (units) required to maintain the present level of profit.

$$= \frac{\text{Total contribution}}{\text{Contribution per unit}} = \frac{\text{₹ } 3,60,000}{\text{₹ } 3.10}$$

= 1,16,111 units

(ii) Increasing dealer's margin by 25%

New dealer's margin = ₹2 + 25% = ₹2.50

New variable cost = ₹8 + ₹6 + ₹2.50 = ₹16.50

Contribution = ₹20 – ₹16.50 = ₹3.50

Sales (units) =  $\frac{\text{₹ } 3,60,000}{\text{₹ } 3.50}$  = 1,02,857 units

The second proposal is recommended because the contribution per unit is higher and the sales (in units) are lower. Lower sales efforts and less finance would be required in implementing the (ii) proposal.

**7.6 Offering Quotations**

One of the best ways for sales promotion is to offer quotations at low rates. A company is producing 80,000 units (80% of capacity) and making a profit of ₹2,40,000. Suppose the Punjab Government has given a tender notice for 20,000 units. It is expected that the units taken by the Government will not affect the sale of 80,000 units which the company is already selling and the company also wishes to

submit the lowest possible quotation. The company may quote any amount above marginal cost, because it will give an additional marginal contribution and hence profit.

### 7.7 Accepting an Offer or Exporting below Normal Price

Sometimes the volume of output and sales may be increased by reducing the normal prices of additional sale. In this case the concern should be cautious enough to see that the sale below normal price in additional markets should not affect the normal market. To be on the safe side the product may be sold under the label of a different brand. If there is additional sale because of export orders, goods may be sold at a price below the normal.

#### Illustration 7

The cost of a manufacturing company for the product is:

	₹
Materials	12.00
Labour	9.00
Variable expenses	6.00
Fixed expenses	<u>18.00</u>
Total	<u>45.00</u>

The unit of product is sold for ₹51.00.

The company's normal capacity is 1,00,000 units. The figures given above are for 80,000 units. The company has received an offer for 20,000 units @ ₹36 per unit from a foreign customer.

Advice the manufacturer on whether the order should be accepted. Also give your advice if the order is from a local merchant.

#### Solution:

Marginal cost for additional 20,000 units

	<i>Per unit</i>	<i>For 20,000 units</i>
	₹	₹
Material	12.00	2,40,000
Labour	9.00	1,80,000
Variable expenses	<u>6.00</u>	<u>1,20,000</u>
Marginal cost	<u>27.00</u>	<u>5,40,000</u>
Additional revenue to be realised		7,20,000
Marginal cost		5,40,000
Net additional revenue (Marginal contribution)		1,80,000

The offer should be accepted because it gives an additional contribution of ₹1,80,000. The total profit will also increase by ₹1,80,000 because fixed expenses have already been recovered from the local market. Furthermore, the order from the local customer should not be accepted at ₹36 per unit or at any rate below the normal price i.e., ₹45 because it will result in the general reduction of selling prices of the product.

*Note:* Acceptance of the additional order should not lead to production being in excess of the present capacity since, in that case, some fixed expenses may also go up substantially. If there is such an increase in fixed expenses, the increase should also be considered by inclusion in the total additional cost to be compared with the additional revenue.

### 7.8 Alternative Use of Production Facilities

When alternative use of production facilities or alternative methods of manufacturing a product are available, contribution analysis should be used to arrive at the final choice. The alternative which will yield highest contribution, shall generally and obviously be selected.

### 7.9 Problem of Key Factor

The product giving the greatest contribution will be the most profitable. To maximise profit, resources should be mobilised towards that product which gives the maximum contribution. But contribution is not the only criterion for deciding profitability. In real life, there may be several factors which may put a limit on the number of units to be produced even if the products give a high contribution. These factors are equally important for arriving at managerial decisions because these factors limit the volume of output at a particular point of time or over a period. These are called key factors, scarce factors, limiting factors, principal budget factors or governing factors. The limiting factors may be sale, raw material, labour, plant capacity and availability of capital e.g., for a concern established in a relatively new town, labour may be a key factor or the concern may find it difficult to acquire an unlimited quantity of raw material because of scarcity or the quota system, etc. In the later case material will be the key factor. The extent of influence of these factors should be carefully examined before arriving at a particular decision. Contribution per unit of key factor should be considered and that course of action should be adopted which gives the highest contribution per unit of key factor.

### Illustration 8

You are given the following information in respect of products X and Y of Bee Cee Co. Ltd.

	<i>Product X</i>	<i>Product Y</i>
Selling price	₹ 42	₹ 33
Direct material	₹ 15	₹ 15
Labour hours (50 paise per hour)	18 hours	9 hours
Variable overheads	50% of Direct wages	

Show which product is more profitable during labour shortage.

**Solution:***Computation of Marginal Contribution*

	<i>Product X</i>	<i>Product Y</i>
	₹	₹
Selling price	42.00	33.00
Less: Variable cost	28.50	21.75
Marginal contribution	13.50	11.25

$$\text{Profitability} = \frac{\text{Contribution}}{\text{Key factor}}$$

$$\text{For product X} = \frac{13.5}{18} = 0.75$$

$$\text{For product Y} = \frac{11.25}{9} = 1.25$$

Thus, product Y is more profitable than X during labour shortage.

**7.10 Selection of a Suitable Product Mix**

A concern, which manufactures more than one product, may have to decide in what proportion should these products be produced or sold. The technique of marginal costing helps to a great extent in the determination of most profitable product or sales mix. The best product mix is that which yields the maximum contribution. In the absence of key factor, contribution under various mix will be found out and the mix which gives the highest contribution will be selected for production.

**Illustration 9**

A company engaged in plantation activities has 200 hectares of virgin land which can be used for growing jointly or individually tea, coffee, and cardamom. The yield per hectare of the different crops and their selling price per kg. are as under:

	<i>Yield</i> (kgs.)	<i>Selling Price</i> (₹ per kg.)
Tea	2,000	20
Coffee	500	40
Cardamom	100	250

The relevant cost data are given below:

(a) Variable cost per kg.:

	<i>Tea</i> (₹)	<i>Coffee</i> (₹)	<i>Cardamom</i> (₹)
Labour charges	8	10	120
Packing materials	2	2	10
Other costs	<u>4</u>	<u>1</u>	<u>20</u>
Total cost	<u>14</u>	<u>13</u>	<u>150</u>



## (iii) Maximum profit

	<i>Production</i> (kgs.)	<i>Rate</i> (₹)	<i>Total</i> (₹)
Contribution from Coffee	25,000	27	6,75,000
Contribution from Cardamom	1,000	100	1,00,000
Contribution from Tea	2,80,000	6	<u>16,80,000</u>
			24,55,000
Less: Fixed Costs			<u>18,00,000</u>
Profit			<u>6,55,000</u>

### 8. PRICING DECISIONS (DISCRIMINATING PRICE AND DIFFERENTIAL SELLING)

Under normal circumstances, selling price is based on total cost i.e. production, administration and selling overheads - fixed as well as variable plus normal profit. In the long term planning selling price must cover all costs plus a desired profit. There are however, variety of business situations where fixation of selling price may vary from inclusion of desired profit to selling even below total cost. Marginal costing technique helps in determining the most profitable relationship between costs, prices and volume of business.

When there is considerable unfilled capacity it may be necessary to accept a lower contribution in order to provide work in the factory. Alternatively, if there is sufficient order normal price may be quoted and the contribution obtainable may be high. The aim of the prices fixer is to sell the present and future capacity for the greatest obtainable contribution. When the capacity is remaining unused, the potential contribution is being sacrificed and the acceptance of an order with a lower contribution will at least partially meet from fixed costs being incurred. This amount of contribution would otherwise be lost if the order is refused. In fixing the lower price than normal, the price fixed must take into consideration the following:

- (i) the amount of contributions at the proposed price;
- (ii) the possibility of other more remuneration job;
- (iii) comparison with normal selling price in order to determine the concession being offered; and
- (iv) the possible adverse effect upon the future sales and customer's confidence in the company's pricing or trading policy.

If the selling price is below the marginal cost, loss will be more than the fixed costs because variable expenses will not be covered fully. Hence efforts should be made to sell the products at a price which is equal to the marginal cost or more than the marginal cost. Product should be discontinued if the price obtained is below the marginal cost so that loss may not be more than the fixed costs. But in the following special circumstances production may be continued even if the selling price is below the marginal cost.

- (i) *When a new product is introduced in the market:* The new product may be sold at a very low price to make it popular. This is done with the expectation

that sale will increase with the passage of time and cost of production will come down as a result of increase in sales.

- (ii) *When foreign market is to be explored to earn foreign exchange:* Government sometimes allow import quota against foreign exchange earned and profit from import quota may be much more than the loss on exporting the product at a price below the marginal cost.
- (iii) *When the firm has already purchased large quantities of materials:* It is appropriate to convert the material into finished goods and sell these at a price below the marginal cost if the sale of materials will give rise to loss which is more than the loss incurred if the production is done.
- (iv) Closure of business means breaking of business connections with customers and the connections may be re-established at a heavy expenditure on advertisement and sales promotion and the same may likely to be retarded because other firms will take advantage of the particular firm's closure and win over the customers. In such instances, it is better to continue the production and to sell the product at a price below the marginal cost.
- (v) When the sales of one product at a price below the marginal cost will push up the sales of other profitable product.
- (vi) When the employees can not be retrenched.
- (vii) When competitors are to be eliminated from the market.
- (viii) When goods are of perishable nature. It is better to sell the perishable goods at a price which they can realise, otherwise these goods will perish and nothing will be realised.

In the case of export orders, besides the usual variable cost, the quotation should take into account, the following:

- (1) Increase in the cost arising out of:
  - (a) Additional packing cost required for sea-worthiness;
  - (b) Additional checks for quality (this being vital as goods should not be returned if rejected for quality);
  - (c) Freight and insurance charges, if not borne by the purchaser;
  - (d) Cost of capital blocked, if payment is not made in advance or is delayed.
- (2) Cost benefits arising out of:
  - (a) Exemptions (non-payments) of customs duty;
  - (b) Exemption of central excise duty on excisable goods or draw-back as per the Central Excise and Sales Tax Act;
  - (c) Subsidies from Government;
  - (d) Saving in Sales promotion expenses and other overheads.
- (3) Earning of Foreign Exchange.

Though the principles applicable for pricing exports are much the same as for home markets, special points to be noted are:

- (a) High export price may facilitate reduction of selling price in the home market.
- (b) Low export price, as low as marginal cost, may be advocated on grounds of benefits that arise out of large volume, (recovery of fixed charges) thus increasing profitability.
- (c) Export prices even below marginal cost may be advocated with an idea of obtaining from the Government, import licences for essential raw materials on grounds of having contributed to export trade and foreign exchange.
- (d) Even lower price when goods are dumped in the export market. Dumping is a sales technique often tried in export markets. Large quantities of merchandise are sold at low prices and before competitors recover of the shock, these dumped merchandise get a foot hold in the export market paving its way for future sales, when upward revision of prices may be possible. One has to be careful that dumped merchandise are not re-exported to compete in the internal market.
- (e) Tax credit on export profits and sales may justify lower export prices.

However, in normal times, pricing should be based on full costs as far as practicable since selling only on the basis of marginal cost may mean a loss (contribution may be less than the total fixed expenses). Marginal costing as a basis for fixation of selling price, is suitable only for utilising excess or idle capacity. If any concessional price is to be offered to a new set of customers, it must not affect the existing market.

## 9. COST VOLUME-PROFIT ANALYSIS

The cost-volume-profit (CVP) analysis helps management in finding out the relationship of costs and revenues to profit. The aim of an undertaking is to earn profit. Profit depends upon a large number of factors, the most important of which are the cost of manufacture and the volume of sales effected. Both these factors are interdependent-volume of sales depends upon the volume production, which in turn is related to costs. Cost, again, is the resultant of the operation of a number of varying factors. Such factors affecting cost are:

- (i) Volume of production;
- (ii) Product-mix;
- (iii) Internal efficiency;
- (iv) Methods of production; and
- (v) Size of plant; etc.

Of all these, volume is perhaps the largest single factor which influences costs which basically, can be divided into fixed costs and variable costs. Volume changes in a business are of frequent occurrence, often necessitated by outside factors over which management has no control and as costs do not always vary in proportion to changes in levels of output, managerial control of the factors of volume presents a peculiar problem.

As profits are affected by the interplay of costs and volume, the management must have at its disposal analysis that can allow reasonably accurate presentation of the effect of a change in any of these factors which would have on profit performance. Cost-volume-profit analysis furnishes a picture of the profit at various level of activity. This enables management to distinguish between the effect of sales volume fluctuations and the results of price or cost changes upon profits. This analysis helps in understanding the behaviour of profits in relation to output and sales.

There is a growing complexity of costs incurred by a company in its efforts to attain sales volume that can permit a satisfactory level of profits. An important segment of profit forecasting revolves around the determination of how costs changes with output. This information can be presented in chart form after making the distinction between fixed and variable costs.

Fixed costs would be the same during any designated period regardless of the volume of output accomplished during the period (provided the output is within the present limits of capacity). These costs are prescribed by contract or are incurred in order to ensure the existence of an operating organisation. Their inflexibility is maintained within the framework of a given combination of resources and within each capacity stage such costs remain fixed regardless of the changes in the volume of actual production. As fixed costs do not change with production, the amount per unit declines as output rises.

Absorption or full costing system seeks to allocate the fixed costs to products. It creates the problem of apportionment and allocation of such costs to various products. By their very nature, the fixed costs have little relationship to the volume of production.

Variable costs are related to the activity itself. The amount per unit remains the same. These costs expand or contract as the activity rises or falls. Within a given time span, distinction has to be drawn between costs that are free of ups and downs of production and those that vary directly with these changes.

Study of behaviour of costs and C.V.P. relationship, needs proper definition of volume or activity. Volume is usually expressed in terms of sales capacity expressed as a percentage of maximum sales; value of sales; unit of sales etc. Production capacity is expressed as a percentage of maximum production, production in revenue or physical terms; direct labour hours or machine hours.

Analysis of cost-volume-profit involves consideration of the interplay of the following factors:

- (i) Volume of sales;
- (ii) Selling price;
- (iii) Product mix of sales;
- (iv) Variable costs per unit; and
- (v) Total fixed costs.

The relationship between two or more of these factors may be (i) present in the form of reports and statements, (ii) shown in charts or graphs, or (iii) established in the form of mathematical deductions.

## 10. OBJECTIVES OF COST-VOLUME-PROFIT ANALYSIS

The objectives of cost-volume profit analysis are given below:

- (1) In order to forecast profit accurately, it is essential to know the relationship between profits and costs on the one hand and volume on the other.
- (2) Cost-volume-profit analysis is useful in setting up flexible budgets which indicate costs at various levels of activity.
- (3) Cost-volume-profit analysis is of assistance in performance evaluation for the purposes of control. For reviewing profits achieved and cost incurred the effects on costs of changes in volume are required to be evaluated.
- (4) Pricing plays an important part in stabilizing and fixing up volume. Analysis of cost-volume-profit relationship may assist in formulating price policies to suit particular circumstances by projecting the effect which different price structures have on costs and profits.
- (5) As predetermined overhead rates are related to a selected volume of production, study of cost-volume relationship is necessary in order to know the amount of overhead costs which could be charged to product costs at various level of operation.

## 11. PROFIT-VOLUME RATIO

The ratio or percentage of contribution margin to sales is known as P/V ratio. This ratio is also known as marginal income ratio, contribution to sales ratio, or variable profit ratio. P/V ratio, usually expressed as a percentage, is the rate at which profit increases with the increase in volume. The formulae for P/V ratio are:

$$\begin{aligned}
 P / V \text{ ratio} &= \frac{\text{Marginal Contribution}}{\text{Sales}} \\
 &\text{Or} \\
 &\frac{\text{Sales Value} - \text{Variable Cost}}{\text{Sales Value}} \\
 &\text{Or} \\
 &1 - \frac{\text{Variable Cost}}{\text{Sales Value}} \\
 &\text{Or} \\
 &\frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales Value}} \\
 &\text{Or} \\
 &\frac{\text{Change in Profits / Contributions}}{\text{Change in Sales}}
 \end{aligned}$$

(All the above formulae really mean the same thing).

A comparison for P/V ratios of different products can be made to find out which product is more profitable. Higher the P/V ratio more will be the profit and lower the P/V ratio, lesser will be the profit. P/V ratio can be improved by:

- (i) Increasing the selling price per unit.
- (ii) Reducing direct and variable costs by effectively utilising, men, machines and materials.
- (iii) Switching the production to more profitable products showing a higher P/V ratio.

## 12. BREAK-EVEN ANALYSIS

Profit planning is based upon anticipated level of activity. In order to determine expected profit at different level of activities, revenue and cost figures for varying levels have to be projected. Since different items of cost behave in different way at different levels, use of 'flexible-budget' techniques is associated with profit planning. Flexible budgeting requires the compartmentalisation of cost into "variable" and "fixed" to analyse the cost for various levels. This categorisation of costs into "variable" and "fixed" elements and their relationship with sales and profits, has been developed as "break-even analysis". This break-even analysis is not only helpful in various managerial decisions, but it also plays a significant role in profit planning. If all costs and expenses can be classified as 'variable' or 'fixed' and if this classification can be carried into the costs of individual products or product lines, it is possible to determine with relative ease the effect on profit of changes in total volume or shifts in the volume from one product to another, and to answer many other questions that have a direct bearing on the planning of operations for maximum profits.

Break-even is the point where total revenue equals the total costs (variable and fixed). It is that level of activity at which an enterprise makes neither a loss nor any profit. At this point or level, the sales revenues are just equal to the costs incurred. Below this level the firm will make losses, while above this level it will be making profits. This is so because that while the variable costs vary according to the variations in the volume or level of activity, the fixed costs do not change. Thus, below the break even point, fixed costs will eat up all excess of sales over variable cost and yet be unsatisfied, leaving a loss. Above the BEP, excess of sales over variable costs (this excess is known as contribution) is much more than the fixed costs of the activities and, it, thus leads to profits. Thus, it is possible to analyse the effect of changes in volume, prices and variable costs on the profits of an organisation, while taking fixed costs as unchangeable. This technique is also known as cost-volume-profit analysis or contribution approach and is remarkably significant in planning and analysing of profits.

## 13. METHODS FOR DETERMINING BREAK EVEN POINTS

The sales volume which equates total revenue with related costs and results in neither profit nor loss is called break-even point (BEP). Break-even point can be determined by the following methods:

### 1. Algebraic methods:

- (i) Contribution Margin Approach
- (ii) Equation technique

2. *Graphic presentation:*

- (i) Break-even chart
- (ii) Profit volume chart

**13.1 Algebraic Methods**

*(i) Contribution Margin Approach*

$$\text{Break-even points (BEP units)} = \frac{\text{Total fixed costs}}{\text{(Selling price per unit - Marginal cost per unit)}}$$

$$\text{Or} = \frac{\text{Total fixed costs}}{\text{Contribution per unit}}$$

Or

$$\text{Break-even point (₹) (BEP Value)} = \frac{\text{Fixed costs} \times \text{Sales}}{\text{Sales} - \text{Marginal cost}}$$

$$\text{Or} = \frac{\text{Fixed Cost}}{\text{P / V Ratio}}$$

$$\text{Or} = \text{Break-even points (units)} \times \text{Selling price per unit}$$

*(ii) Equation Technique*

It is based on an income equation i.e.

$$\text{Sales} - \text{Total costs} = \text{Net profit.}$$

Breaking up total costs into fixed and variable,

$$\text{Sales} - \text{Fixed costs} - \text{Variable cost} = \text{Net profit}$$

$$\text{Sales} = \text{Fixed costs} + \text{Variable cost} + \text{Net profit}$$

i.e.

$$\text{SP}(S) = \text{FC} + \text{VC}(S) + \text{P.}$$

where

SP = Selling price per unit

S = Number of units required to be sold to break-even

FC = Total fixed costs

VC = Variable cost per unit

P = Net profit (Zero)

$$\text{SP}(S) = \text{FC} + \text{VC}(S) + \text{Zero}$$

$$\text{SP}(S) = \text{FC} + \text{VC}(S) + 0$$

$$\text{SP}(S) - \text{VC}(S) = \text{FC}$$

or

$$S(\text{SP} - \text{VC}) = \text{FC}$$

$$S = \frac{\text{FC}}{\text{SP} - \text{VC}}$$

To calculate the level of sales required to earn a particular level of profit, the formula is:

$$\text{Required Sales} = \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/V ratio}}$$

### Illustration 10

A product is sold at a price of ₹120 per unit and its variable cost is ₹80 per unit. The fixed expenses of the business are ₹ 8,000 per year. Find (i) BEP in ₹ and units, (ii) profits made when sales are 240 units, (iii) Sales to be made to earn a net profit of ₹ 5,000 for the year.

#### Solution:

	₹
Selling prices per unit	120
Less: Variable cost	80
Contribution per unit	40

$$\text{P/V ratio} = \frac{\text{Contribution}}{\text{Sales}} = \frac{40 \times 100}{120} = 33 \frac{1}{3} \%$$

$$\begin{aligned} \text{(i) BEP in ₹} &= \frac{\text{FC}}{\text{P/V ratio}} & \text{BEP in units} &= \frac{\text{FC}}{\text{Contribution per unit}} \\ &= \frac{\text{₹ 8,000}}{33 \frac{1}{3}} & &= \frac{\text{₹ 8,000}}{\text{₹ 40}} \\ &= \frac{\text{₹ 8,000} \times 3}{1} & & \\ &= \text{₹ 24,000} & & \end{aligned}$$

(ii) Contribution per unit ₹40

Total contribution of 240 Units = 240 x 40 =	₹ 9,600
Less: Fixed Cost for the year	<u>8,000</u>
Profit	₹ <u>1,600</u>

$$\begin{aligned} \text{(iii) Required Sales} &= \frac{\text{FC} + \text{Desired profit}}{\text{P/V ratio}} \\ &= \frac{\text{₹ 800} + \text{₹ 5,000}}{\frac{1}{3}} \\ &= \text{₹ 13,000} \times 3 = \text{₹ 39,000.} \end{aligned}$$

## 13.2 Graphic Presentation

### (i) Break-even chart

Accounting to the Chartered Institute of Management Accountants, London the break-even chart means a chart which shows profit or loss at various levels of

activity, the level at which neither profit nor loss is shown being termed as the break-even point". It is a graphic relationship between costs, volume and profits. It shows not only the BEP but also the effects of costs and revenue at varying levels of sales. The break-even chart can therefore, be more appropriately called the cost-volume-profit graph.

#### *Assumptions regarding Break-Even Charts*

- (i) Costs are bifurcated into variable and fixed components.
- (ii) Fixed costs will remain constant and will not change with change in level of output.
- (iii) Variable cost per unit will remain constant during the relevant volume range of graph.
- (iv) Selling price will remain constant even though there may be competition or change in volume of production.
- (v) The number of units produced and sold will be the same so that there is no operating or closing stock.
- (vi) There will be no change in operating efficiency.
- (vii) In case of multi-product companies, it is assumed that the sales mix remains constant.

A break-even chart can be presented in different forms.

#### **First Method**

On the X-axis of the graph is plotted the volume of productions or the quantities of sales and on the Y-axis (vertical line) costs and sales revenues are represented. The fixed costs line is drawn parallel to X-axis. The variable costs for different levels of activity are plotted over the fixed cost line, which shows that the cost is increasing with the increase in the volume of output. The variable cost line is joined to fixed cost line at zero volume of production. This line is regarded as the total cost line. Sales values at various levels of output are plotted from the origin and joined is called the sales line. The sales line will cut the total cost line at a point where the total costs equal to total revenues and this point of intersection of two lines is known as break-even point or the point of no profit no loss. The lines produced from the inter-section to Y-axis and X-axis may give sales value and the number of units produced at break-even point respectively. Loss and profit are as have been shown in the chart which shows that if production is less than the break-even point, the business shall be running at a loss and if the production is more than the break even level, there will be profit. The angle which the sales line makes with total cost line while intersecting it at BEP is called angle of incidence. A large angle of incidence denotes a good profit position of a company.

#### **Illustration 11**

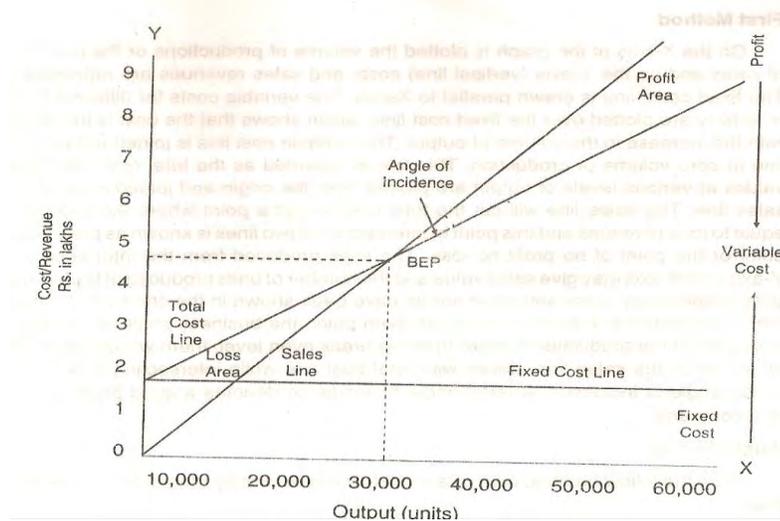
From the following data, calculate the break-even point by means of a break-even chart:

Selling price per unit	= ₹ 15
Variable cost per unit	= ₹ 10
Total fixed cost	= ₹ 1,50,000

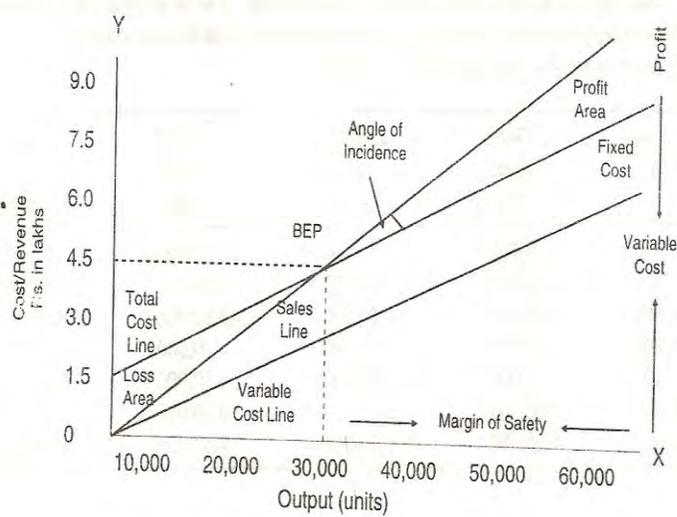
**Solution:**

For plotting the data, we need at least two points - one for plotting the total cost line and other for plotting the total sales line. Therefore, it will be necessary to presume different levels of output and sales as below:

Output units	Fixed costs (₹)	Variable costs (₹)	Total cost (₹)	Sales (₹)
0	1,50,000	—	1,50,000	—
10,000	1,50,000	1,00,000	2,50,000	1,50,000
20,000	1,50,000	2,00,000	3,50,000	3,00,000
30,000	1,50,000	3,00,000	4,50,000	4,50,000
40,000	1,50,000	4,00,000	5,50,000	6,00,000
50,000	1,50,000	5,00,000	6,50,000	7,50,000
60,000	1,50,000	6,00,000	7,50,000	9,00,000

**Second Method**

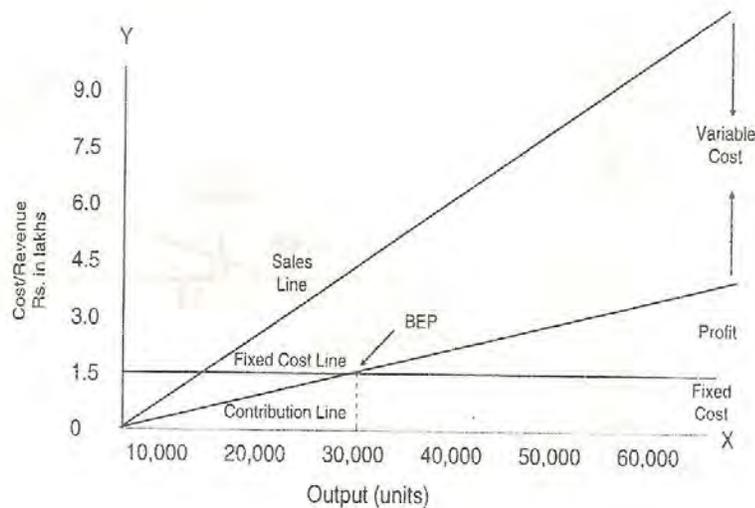
This is variation of the first method in which variable cost line is drawn first and thereafter drawing the fixed cost line above the variable cost line. The later line will be the total cost line. The sales line is drawn as usual. The added advantage of this method is that contributions at various levels of output are automatically depicted in the chart.



**(i) Contribution break-even chart**

The chart helps in ascertaining the amount of contribution at different levels of activity besides the break-even point. In this method, the fixed cost line is drawn

parallel to the X-axis. The contribution line is then drawn from the origin which goes up with the increase in output. The sales line is plotted as usual, but the question of intersection of sales line with cost line does not arise. The contribution line crosses the fixed cost line and the point of intersection is treated as break-even point. At this point, contribution is equal to fixed expenses and there is no profit or loss. If the contribution is more than the fixed expenses, profit will arise and if the contribution is less than the fixed expenses, loss will arise.



**(ii) Profit-volume Graph**

Profit volume graph is the graphical representation of the relationship between profit and volume. Separate lines for costs and revenues are eliminated from the P/V graph as only profit points are plotted. It is based on the same information as is required for the traditional break-even chart and is characterised by the same limitations. The steps in the construction of profit volume graph are as follows:

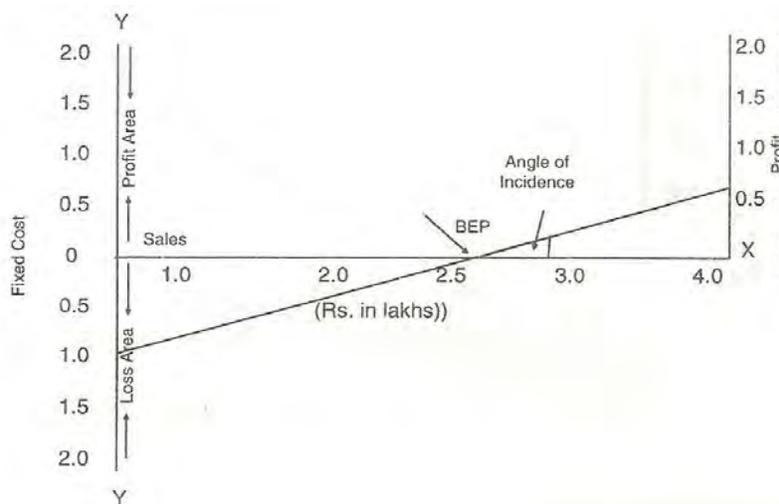
- (i) Profit and fixed costs are represented on the vertical axis.
- (ii) Sales are shown on the horizontal axis.
- (iii) The sale line divides the graph into two parts both horizontally and vertically. The area above the horizontal line is the 'profit area' and that below it is the 'loss area' at which fixed costs are represented on the vertical axis below the sale line and profits on the same axis above the sale line.
- (iv) Profits and fixed costs are plotted for corresponding sales volume and the points are joined by a line which is the profit line.

**Illustration 12**

Y Ltd. represents the following data:

	₹
Sales	4,00,000
Variable costs	2,40,000
Fixed costs	1,00,000
Net profit	60,000

Draw a profit volume graph.

**Solution:**

From the above graph the following data can be calculated:

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Sales} - \text{Variable expenses}}{\text{Sales}} \times 100 \\ &= \frac{\text{₹4,00,000} - \text{₹2,40,000}}{\text{₹4,00,000}} \times 100 \\ &= \frac{\text{₹1,60,000}}{\text{₹4,00,000}} \times 100 \end{aligned}$$

$$\begin{aligned} \text{BEP} &= \frac{\text{Fixed cost}}{\text{P/V ratio}} \\ &= \frac{\text{₹1,00,000}}{\text{₹40}} = \text{₹ 2,50,000} \end{aligned}$$

$$\begin{aligned} \text{Margin of safety} &= \frac{\text{Profit}}{\text{P/V ratio}} = \frac{\text{₹60,000}}{40\%} \\ &= \frac{\text{₹60,000} \times 100}{40} = \text{₹ 1,50,000} \end{aligned}$$

#### 14. MARGIN OF SAFETY

Margin of safety is the difference between the actual sales and sales at break-even point. Sales beyond break-even volume brings in profits. Such sales represent a margin of safety. Margin of safety is calculated as follows:

$$\text{Margin of safety} = \text{Total sales} - \text{Break even sales}$$

Margin of safety can also be calculated with the help of P/V ratio i.e.

$$\text{Margin of safety} = \frac{\text{Profit}}{\text{P/V ratio}}$$

Margin of safety can also be expressed as percentage of sales

$$\text{i.e. } \frac{\text{Margin of safety} \times 100}{\text{Total sales}}$$

It is important that there should be reasonable margin of safety, otherwise, a reduced level of activity may prove disastrous. The soundness of a business is gauged by the size of the margin of safety. A low margin of safety usually indicates high fixed overheads so that profits are not made until there is a high level of activity to absorb fixed costs.

A high margin of safety shows that break-even point is much below the actual sales, so that even if there is a fall in sales, there will still be a point. A low margin of safety is accompanied by high fixed costs, so action is called for reducing the fixed costs or increasing sales volume.

The margin of safety may be improved by taking the following steps:

- (i) Lowering fixed costs.
- (ii) Lowering variable costs so as to improve marginal contribution.
- (iii) Increasing volume of sales, if there is unused capacity.
- (iv) Increasing the selling price, if market conditions permit, and
- (v) Changing the product mix as to improve contribution.

### Illustration 13

From the following figures ascertain the break-even sales and also show the computation by means of a graph.

	₹
Sales	20,00,000
Fixed Costs	5,00,000
Variable costs	12,00,000

### Solution:

Total Contribution:	₹
Sales	20,00,000
Variable Cost	12,00,000
Contribution	8,00,000

$$\text{As percentage of sales or P/V ratio } \frac{₹ 8,00,000}{₹ 20,00,000} \times 100 = 40\%$$

$$\text{Alternatively: } \frac{\text{Fixed Costs} + \text{Profit}}{\text{Sales}} \times 100$$

$$\frac{₹ 5,00,000 + ₹ 3,00,000}{₹ 20,00,000} \times 100 = 40\%$$

Break-even sales:

$$= \frac{\text{Fixed Costs}}{\text{P/V ratio}} \text{ i.e. } \frac{₹ 5,00,000 \times 100}{40} = ₹ 12,50,000$$

Proof: Variable Costs:

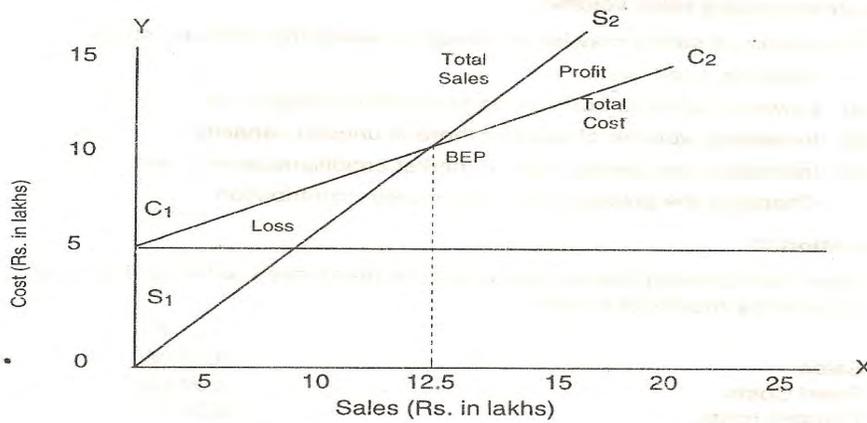
60% of ₹ 12,50,000	7,50,000
Fixed Costs	5,00,000
Total Cost	12,50,000

Total costs equal sales; hence there is neither profit nor loss.

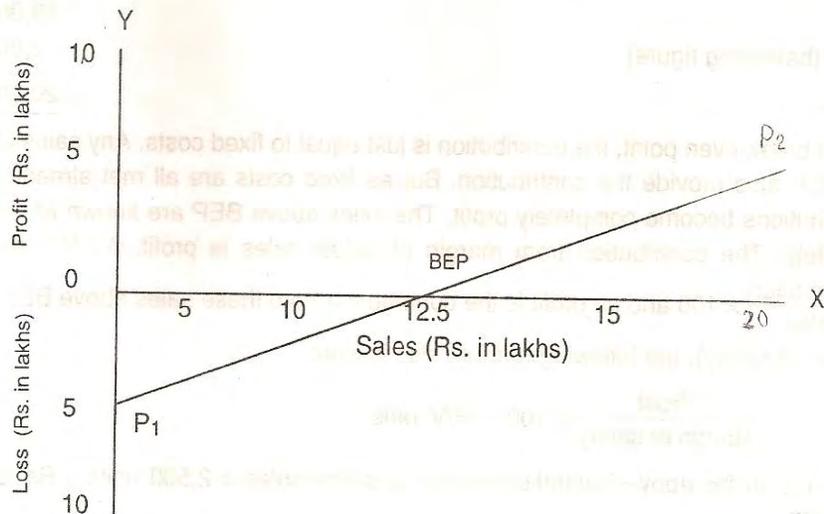
**BREAK-EVEN CHART**

Points plotted:

Sales ₹	Variable Costs ₹ (60% of sales)	Fixed Costs ₹	Total Cost ₹
0	0	5,00,000	5,00,000 (C <sub>1</sub> )
15,00,000	9,00,000	5,00,000	14,00,000 (C <sub>2</sub> )

**PROFIT-VOLUME CHART**

(At zero sale loss is ₹5 lakh: at ₹20,00,000 sales, profits is ₹3 lakh (P<sub>2</sub>). Draw a line to join these two points. The break-even sale is at the point where it meets the X-axis).



**Illustration 14**

The sales of a company are @ ₹ 200 per unit	₹ 20,00,000
Variable cost	12,00,000
Fixed cost	6,00,000
The capacity of the factory	15,000 units

Determine the BEP. How much profit is the company making?

**Solution:**

Contribution per unit:	₹
Selling price per unit	200
Variable cost per unit	<u>120*</u>
Contribution per unit	<u>80</u>
Fixed expenses	₹ 6,00,000
Break-even point	$\frac{₹ 6,00,000}{₹ 80} = 7,500 \text{ units}$

(\*Total number of units is 10,000 since sale at ₹200 per unit is ₹20,00,000; ₹12,00,000 ÷ 10,000 = ₹120)

Profit being earned:

Annual Sales (units)	10,000
BEP (units)	<u>7,500</u>
Sales above BEP (Margin of safety)	<u>2,500</u>
Contribution at ₹ 80 per unit (profit)	<u>2,00,000</u>

Proof:

Variable cost	12,00,000
Fixed cost	<u>6,00,000</u>
Total	18,00,000
Profit (balancing figure)	<u>2,00,000</u>
Sales	<u>20,00,000</u>

At break-even point, the contribution is just equal to fixed costs. Any sales above the BEP also provide the contribution. But as fixed costs are all met already such contributions become completely profit. The sales above BEP are known as margin of safety. The contribution from margin of safety sales is profit. As P/V ratio is  $\frac{\text{Contribution}}{\text{Sales}} \times 100$  and as profit is the contribution from these sales above BEP (i.e., margin of safety), the following formula also is true:

$$\frac{\text{Profit}}{\text{Margin of safety}} \times 100 = \text{P/V ratio}$$

Thus, in the above illustration margin of safety sales = 2,500 units x ₹200 = 5,00,000.

Profit = ₹2,00,000

$$\therefore \text{P/V Ratio} = \frac{\text{Pr ofit}}{\text{Margin of safety}} \times 100 = \frac{\text{₹ } 2,00,000}{\text{₹ } 5,00,000} \times 100 = 40\%$$

This is true otherwise also, i.e.,  $\frac{\text{Total contribution}}{\text{Total sales}} \times 100$

$$\frac{\text{₹ } 8,00,000}{\text{₹ } 20,00,000} \times 100 = 40\%$$

### Illustration 15

Sales are ₹1,50,000, producing a profit of ₹4,000 in period I. Sales are ₹1,90,000, producing a profit of ₹12,000 in period II. Determine the BEP.

#### Solution:

Difference in profit = ₹8,000

Difference in sales = ₹40,000 Since the change in the sale must have led to the change in the profit,

$$\text{P/V ratio} = \frac{\text{₹ } 8,00,000}{\text{₹ } 40,000} \times 100 = 20\%$$

At BEP, Profit = Nil.

If ₹20 is to be reduced from profit, sales must be reduced by ₹100

To reduce profit by ₹4,000 reduction in sale:

$$\frac{100 \times \text{₹ } 4,000}{\text{₹ } 20} = \text{₹ } 20,000$$

BEP = ₹1,30,000 (i.e., sales producing profit of ₹4,000 less reduction in sales of ₹20,000 to wipe out the profit).

*Alternatively:*

Total contribution on ₹1,50,000 @ 20%	₹30,000
Profit	₹ 4,000
∴ Fixed expenses	₹ <u>26,000</u>

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$\text{BEP} = \frac{26,000 \times 100}{20} = \text{₹ } 1,30,000$$

### 15. COMPOSITE BREAK EVEN POINT

A business undertaking may have different manufacturing establishments each having its own production capacity, and fixed costs but producing the same product. At the same time, the concern as a whole is a unit having different establishments under the same management. Hence the combined fixed costs have to be met by the

combined BEP sales. In this analysis, there are two approaches namely:

- (i) Constant product mix approach.
- (ii) Variable product mix approach.

Under the first approach, the ratio in which the products of the various establishments are mixed is constant. This mix will be maintained at BEP sales also. Under the second approach the product of that establishment would be preferred where the contribution ratio is higher. The above two approaches are explained by the following illustration.

### Illustration 16

'A Limited' has two factories X and Y producing the same article whose selling price is ₹150 per unit. The following are the other particulars:

	<i>Factory X</i>	<i>Factory Y</i>
Capacity (unit)	10,000	15,000
Variable cost per unit	₹ 100	₹ 120
Fixed expenses	₹ 3,00,000	₹ 2,10,000

Determine the BEP for the two factories and for the company as a whole assuming

- (i) Constant Sales Mix, (ii) Variable Sales Mix.

### Solution:

BEP for the two factories separately:

	<i>Factory X</i>	<i>Factory Y</i>
Contribution per unit	₹ 50	₹ 30
Fixed expenses	₹3,00,000	₹2,10,000
∴ Break-even point	6,000 units	7,000 units
	$= \frac{₹ 3,00,000}{50}$	$= \frac{₹ 2,10,000}{30}$

Composite BEP:

1. Constant sales mix:

$$\text{Combined P/V ratio} = (2/5 \times ₹50) + (3/5 \times ₹30) = = \frac{₹ 38}{₹150} \times 100 = \frac{76}{3}$$

$$\text{Combined fixed expenses} = ₹5,10,000$$

$$\therefore \text{BEP} = \frac{₹ 5,10,000 \times 3 \times 100}{76} = ₹20,13,158$$

As sales price is uniform, the mix ratio is the capacity ratio itself, i.e., 2 : 3

$$X = ₹8,05,263 \text{ or } 5,369 \text{ units}$$

$$Y = ₹12,07,895 \text{ or } 8,052 \text{ units}$$

*Workings:*

*Ratios of Sales Mix:*

Total units = 10,000 + 15,000 = 25,000

$$\therefore X = \frac{10,000}{25,000} = 2/5$$

$$\therefore Y = \frac{15,000}{25,000} = 3/5$$

## 2. Variable Sales Mix

As factory X is giving a higher contribution, it shall be used in full, i.e., 10,000 units should be produced here before production is commenced at Y. This will give a contribution of ₹5,00,000.

Total fixed expenses for the two factories	₹5,10,000
Additional contribution required to meet the fixed expenses fully	₹ 10,000
Number of units to be produced at Y to produce this contribution	334
Total number of units:	
X	10,000
Y	<u>334</u>
	10,334

The above discussion could also be applied to an undertaking selling different products each having its own contribution and sales potential. The composite BEP for the business could be worked out keeping the product mix constant. This would involve working out a composite P/V Ratio as in the above case.

### Illustration 17

The budget of N Ltd. includes the following data for the forthcoming financial year:

(a) Fixed expenses	₹3,00,000
(b) Contribution per unit	Product A - ₹6; Product B - ₹2.50; Product C - ₹4
(c) Sales Forecast	Product A - 24,000 units @ ₹12.50 Product B - 1,00,000 units @ ₹7.00 Product C - 50,000 units @ ₹10.00

Calculate the combined P/V ratio and combined BEP.

### Solution:

Sales mix forecast	A = 24,000 x ₹12.50	=	₹ 3,00,000
	B = 1,00,000 x ₹7.00	=	₹ 7,00,000
	C = 50,000 x ₹10.00	=	₹ 5,00,000
			<u>₹ 15,00,000</u>

∴ Sales mix = 3 : 7 : 5

$$\text{Combined P/V Ratio} = \frac{(3/15 \times 6) + (7/15 \times 2.50) + (5/15 \times 4)}{(3/15 \times 12.50) + (7/15 \times 7) + (5/15 \times 10)}$$

Or

$$\frac{(1,44,000 + 2,50,000 + 2,00,000)}{15,00,000}$$

$$= \frac{594}{1500}$$

Composite BEP =  $\frac{\text{Total fixed expenses}}{\text{Composite P/V ratio}}$

$$= \frac{3,00,000 \times 1,500}{594}$$

$$= ₹7,57,575$$

BEP Sales for the 3 products (in the ratio of 3 : 7 : 5) = A ₹1,51,515 or 12,121 units  
B ₹3,53,535 or 50,505 units  
C ₹2,52,525 or 25,253 units

If we solve this problem on the basis of second alternative, i.e., to change the sales mix so that priority is given to that product which gives the highest per unit contribution then product A will have to be produced in full, i.e., 24,000 units and secondly product C. The BEP in that case will be:

Total fixed cost upto BEP = ₹3,00,000

	Sales		Contribution	
	₹			₹
I Priority: Product A 24,000				
@ ₹12.50	3,00,000	@ 6		1,44,000
II Priority: Product C 39,000				
@ ₹10.00	<u>3,90,000</u>	@ 4		<u>1,56,000</u>
	<u>6,90,000</u>			<u>3,00,000</u>
<i>Above BEP</i>				
Product C 11,000 @ 10.00	1,10,000	@ 4		44,000
Product B 1,00,000 @ ₹ 7	<u>7,00,000</u>	@ 2.50		<u>2,50,000</u>
	<u>8,10,000</u>			<u>2,94,000</u>

Hence the sales at BEP will be ₹6,90,000. This is lower than the BEP already worked out by keeping the sales mix constant.

### Illustration 18

The under mentioned information is given below:

- (1) The P/V Ratio of a firm is 40%.
- (2) The firm wants to increase its selling price by 10%.

- (3) The firm's variable cost is higher now by 5%.  
 (4) The fixed expenses of the firm have gone up from ₹2,00,000 to ₹2,58,500.

Work out the original BEP sales and the revised BEP sales.

**Solution:**

Original BEP sales

P/V ratio = 40%

Fixed expenses = ₹2,00,000

Present BEP =  $\frac{₹2,00,000 \times 100}{40} = ₹5,00,000$

New sales = 110 (i.e., 10% increase)

Variable cost = 63 (i.e., 5% increase)

Revised P/V ratio =  $\frac{47}{110} \times 100$  or 42.73%

Revised fixed expenses = ₹2,58,500

Revised BEP =  $\frac{₹2,58,500 \times 100}{40} = ₹6,04,961$

**16. PRACTICAL APPLICATIONS OF PROFIT-VOLUME RATIO**

Profit volume (or contribution-sales) ratio is a logical extension of marginal costing. It is the study of the inter-relationships of cost behaviour patterns, levels of activity and the profit that results from each alternative combination. The practical application of profit volume ratio may be enumerated as follows:

- (a) Ascertainment of profit on a particular level of sales volume.
- (b) Determination of break-even point.
- (c) Calculation of sales required to earn a particular level of profit.
- (d) Estimation of the volume of sales required to maintain the present level of profit in case selling prices are to be reduced by a stipulated margin.
- (e) Useful in developing flexible budgets for cost control purposes.
- (f) Identification of minimum volume of activity that the enterprise must achieve to avoid incurring losses.
- (g) Provision of data on relevant costs for decisions relating to pricing, keeping or dropping product lines, accepting or rejecting particular orders, make or buy decision, sales mix planning, altering plant layout, channels of distribution specification, promotional activities etc.
- (h) Guiding in fixation of selling price where the volume has a close relationship with the price level.
- (i) Evaluation of the impact of cost factors on profit.

**Illustration 19**

With a view to increase the volume of sales, Ambitious Enterprises has in mind a proposal to reduce the price of its product by 20%. No change in total fixed costs or variable costs per unit is estimated. The directors, however, desire the present level of profit to be maintained.

The following information has been provided:

Sales—50,000 units	₹5,00,000
Variable costs ₹5 per unit	
Fixed Costs	₹50,000

Advice management on the basis of various calculations made from the data given.

**Solution:****Marginal Cost Statement**

Sales	₹5,00,000
Less: Variable Costs	<u>2,50,000</u>
Contribution	2,50,000
Less: Fixed Costs	<u>50,000</u>
Profit	<u>2,00,000</u>

$$\begin{aligned}
 \text{Profit/Volume Ratio} &= \frac{\text{Sales} - \text{Variable Costs}}{\text{Sales}} \times 100 \\
 &= \frac{\text{₹5,00,000} - \text{₹2,50,000}}{5,00,000} \times 100 \\
 &= \frac{\text{₹2,50,000}}{\text{₹5,00,000}} \times 100 \\
 &= 50\%
 \end{aligned}$$

In the event of reduction in selling price without any corresponding increase in sales volume.

$$\begin{aligned}
 \text{P/V Ratio} &= \frac{\text{₹4,00,000} - \text{₹2,50,000}}{5,00,000} \times 100 \\
 &= \frac{\text{₹1,50,000}}{\text{₹4,00,000}} \times 100 = 37.5\%
 \end{aligned}$$

In the view of the fact that the directors wish to maintain the same level of profit after reduction of selling price as before reduction and it is expected that fixed costs will not change, sales volume required to meet such a situation would be:

$$\frac{\text{Fixed Costs} + \text{Profit}}{\text{P/V Ratio}}$$

$$\text{or } \frac{\text{₹ } 50,000 + \text{₹ } 2,00,000}{37.5\%}$$

$$\text{or } \text{₹ } 2,50,000 \times \frac{100}{1} \times \frac{2}{75} \text{ or } \text{₹ } 6,66,667$$

or 83,333 units approximately.

Thus, a reduction of 20% in the selling price requires an increase of about 66% in the sales volume.

Armed with this information, the management has to decide between two alternatives of to reduce or not to reduce the selling price, taking into consideration whether it would be able to measure up to the task of increasing the sales volume by 66%.

*Verification:* The conclusion that, with a view to get an approximate sales revenue of ₹6,66,667, sale of additional 33,333 units approximately would be required, can be verified as thus:

Sales	₹ 6,66,667	(approx.)
Less: Variable Cost (83,333 units @ ₹5 each)	<u>4,16,665</u>	—
Contribution	2,50,002	—
Less: Fixed Costs	<u>50,000</u>	—
Profit	<u>2,00,002</u>	—

### Illustration 20

A factory produces 300 units of a product per month. The selling price is ₹120 and variable cost ₹80 per unit. The fixed expenses of the factory amount to ₹8,000 per month. Calculate: (i) the estimated profit in a month wherein 240 units are produced, (ii) the sales to be made to earn a profit of ₹7,000 per month.

#### Solution:

Selling price per unit	₹ 120.00
Less: Variable cost per unit	<u>80.00</u>
Contribution per unit	<u>40.00</u>

$$\therefore \text{P/V ratio} \left( \frac{\text{Contribution}}{\text{Selling price}} \times 100 \right) = \frac{40}{120} \times 100 = 33\text{-}1/3\%$$

(i) Profit on sale of 240 units:

Sale of 240 units at ₹ 120 each	₹ 28,800
Contribution from the above at 33-1/3%	₹ 9,600
Less: Fixed cost of 1 month	<u>₹ 8,000</u>
∴ Profit	<u>₹ 1,600</u>

This result can also be arrived at as follows:

No. of units to be sold	= 240
Contribution per unit	= ₹ 40
∴ Contribution from 240 units	= 240 x ₹ 40
	= ₹ 9,600
Less: Fixed cost for the month	= ₹ 8,000
∴ Profit	= ₹ 1,600

(ii) Sales required to earn a profit of ₹ 7,000:

Profit required to be earned	= ₹ 7,000
Add: Fixed costs per month	= ₹ 8,000
Total contribution to be earned	= ₹ 15,000
P/V ratio	= 33-1/3%
i.e., Sales required to earn ₹ 33-1/3	= ₹ 100
∴ Sales required to earn ₹ 15,000	= $\frac{₹ 15,000 \times 100}{33 \frac{1}{3}}$
	= ₹ 45,000

This result can also be arrived at through contribution per unit:

Contribution required to cover fixed expenses and profit	= ₹ 15,000
Contribution per unit	= ₹ 40
∴ No. of units to be sold to earn ₹ 15,000	= $\frac{15,000}{₹ 40}$
	= 375 units
Selling price per unit	= ₹ 120
∴ Total sales	= 375 x ₹ 120
	= ₹ 45,000

### Illustration 21

There are two plants manufacturing the same products under one corporate management which decides to merge them.

Following particulars are available regarding the two plants:

	<i>Plant I</i>	<i>Plant II</i>
Capacity operation	100%	60%
Sales	₹ 6,00,00,000	₹ 2,40,00,000
Variable costs	₹ 4,40,00,000	₹ 1,80,00,000
Fixed costs	₹ 80,00,000	₹ 40,00,000

You are required to calculate for the consideration of the Board of directors:

- What would be the capacity of merged plant to be operated for purpose of break-even?
- What would be the profitability on working at 75 per cent of the merged capacity?

**Solution:**

**Note:** Sales and variable costs of Plant II must be brought from 60% to 100% before merger of two plants data at 100% capacity operation.

(a) Calculation of the Capacity of Merged Plant to Break-even at 100% Capacity.

$$\begin{aligned} \text{P/V Ratio} &= \frac{\text{Contribution}}{\text{Sales}} \times 100 = \text{P/V ratio} = \frac{2,60,00,000}{10,00,000} \times 100 \\ &= 26 \text{ per cent.} \end{aligned}$$

$$\begin{aligned} \text{Sales at Break-even Point} &= \frac{\text{Fixed Costs}}{\text{P/V Ratio}} \\ &= \frac{\text{₹ } 1,20,000}{26\%} \\ &= \text{₹ } 4,61,53,846 \text{ (Approx.)} \end{aligned}$$

In terms of percentage capacity, sales at break-even point work out to 46.15 per cent approximately.

$$\left( \frac{\text{₹ } 4,61,53,846}{\text{₹ } 10,00,00,000} \times 100 \right)$$

*Workings:*

$$\begin{aligned} \text{Sales at 100\% capacity} &= \text{₹ } 6,00,00,000 + \left( \frac{100}{60} \times \text{₹ } 2,40,00,000 \right) \\ &= \text{₹ } 10,00,00,000 \end{aligned}$$

$$\begin{aligned} \text{Contribution at 100\% capacity} &= (\text{₹ } 6,00,00,000 - \text{₹ } 4,40,00,000) \\ &\quad + \left( \frac{100}{60} \times \text{₹ } 2,40,00,000 \right) \\ &\quad - \left( \frac{100}{60} \times \text{₹ } 1,80,00,000 \right) \\ &= (\text{₹ } 1,60,00,000) + (\text{₹ } 1,00,00,000) \\ &= \text{₹ } 2,60,00,000. \end{aligned}$$

(b) Calculation of profit on working at 75% of the merged capacity.

*Marginal Cost Statement*

Sales (75% of ₹10,00,00,000)	₹ 7,50,00,000
------------------------------	------------------

Less: Variable Costs:

$$75\% \text{ of } (\text{₹}4,40,00,000) + \frac{100}{60} \times \text{₹}1,80,00,000 \quad \underline{5,55,00,000}$$

Contribution 1,95,00,000

Less: Fixed Costs 1,20,00,000

Profit 75,00,000

### Illustration 22

The budgeted results of X Ltd., include the following:

Sales	Amount (in lakhs)	Variable Costs as % of Sales Value
A	5.00	60%
B	4.00	50%
C	8.00	65%
D	3.00	80%
E	<u>6.00</u>	<u>75%</u>
	<u>26.00</u>	<u>65.77%</u>

Fixed costs for the period are ₹9 lakhs. You are required to:

- Produce a statement showing the amount of loss expected, and
- Recommend a change in sales volume of each product which will eliminate the expected loss assuming that sale of only one product can be increased at a time.

### Solution:

(a) Statement showing the loss expected

Product	Sales	Variable Cost as % Sales Value	Variable Cost	Contribution	P/V Ratio
A	5,00,000	60%	3,00,000	2,00,000	40%
B	4,00,000	50%	2,00,000	2,00,000	50%
C	8,00,000	65%	5,20,000	2,80,000	35%
D	3,00,000	80%	2,40,000	60,000	20%
E	<u>6,00,000</u>	<u>75%</u>	<u>4,50,000</u>	<u>1,50,000</u>	<u>25%</u>
	<u>26,00,000</u>	<u>65.77%</u>	<u>17,10,000</u>	<u>8,90,000</u>	<u>34.23%</u>

Contribution ₹8,90,000

Less: Fixed Cost ₹9,00,000

Loss/Under recovery of fixed cost (10,000)

(b) Additional Volume of sales required:

$$\text{Additional Sales} = \frac{\text{Under - recovery of fixed costs}}{\text{P / V Ratio}}$$

Thus

$$\text{Product A } \frac{\text{₹} 10,000}{40\%} \text{ or } \text{₹} 10,000 \times \frac{100}{40} \text{ or } \text{₹} 25,000$$

$$\text{Product B } \frac{\text{₹} 10,000}{50\%} \text{ or } \text{₹} 10,000 \times \frac{100}{50} \text{ or } \text{₹} 20,000$$

$$\text{Product C } \frac{\text{₹} 10,000}{35\%} \text{ or } \text{₹} 10,000 \times \frac{100}{35} \text{ or } \text{₹} 28,571 \text{ approx.}$$

$$\text{Product D } \frac{\text{₹} 10,000}{20\%} \text{ or } \text{₹} 10,000 \times \frac{100}{20} \text{ or } \text{₹} 50,000$$

$$\text{Product E } \frac{\text{₹} 10,000}{25\%} \text{ or } \text{₹} 10,000 \times \frac{100}{25} \text{ or } \text{₹} 40,000$$

$$\text{Total } \frac{\text{₹} 10,000}{34.23} \text{ or } \text{₹} 10,000 \times \frac{100}{34.23} \text{ or } \text{₹} 29,214 \text{ approx.}$$

The calculations given above clearly shows that, if X Co. Ltd., can increase sales of product A by ₹25,000 or that of product E by ₹40,000 its business operations would touch the break- even point.

**Note:** P/V Ratio in respect of different products has been calculated as thus:

Using the formula:

$$\frac{\text{Sales} - \text{Variable cost}}{\text{Sales}}$$

Therefore:

$$\text{Product A } \frac{\text{₹} 5,00,000 - \text{₹} 3,00,000}{\text{₹} 5,00,000} \times 100 \text{ or } \frac{\text{₹} 2,00,000}{\text{₹} 5,00,000} \times 100 \text{ or } 40\%$$

$$\text{Product B } \frac{\text{₹} 4,00,000 - \text{₹} 2,00,000}{\text{₹} 4,00,000} \times 100 \text{ or } \frac{\text{₹} 2,00,000}{\text{₹} 4,00,000} \times 100 \text{ or } 50\%$$

$$\text{Product C } \frac{\text{₹} 8,00,000 - \text{₹} 5,20,000}{\text{₹} 8,00,000} \times 100 \text{ or } \frac{\text{₹} 2,80,000}{\text{₹} 8,00,000} \times 100 \text{ or } 35\%$$

$$\text{Product D } \frac{\text{₹} 3,00,000 - \text{₹} 2,40,000}{\text{₹} 3,00,000} \times 100 \text{ or } \frac{\text{₹} 60,000}{\text{₹} 3,00,000} \times 100 \text{ or } 20\%$$

$$\text{Product E } \frac{\text{₹} 6,00,000 - \text{₹} 4,50,000}{\text{₹} 6,00,000} \times 100 \text{ or } \frac{\text{₹} 1,50,000}{\text{₹} 6,00,000} \times 100 \text{ or } 25\%$$

## 17. OTHER USES OF COST-VOLUME-PROFIT ANALYSIS

1. C.V.P. analysis helps in forecasting costs and profits as a result of change in volume.
2. It helps fixing a sales volume level to earn or cover a given revenue, return on capital employed, or rate of dividend.
3. It assists determination of effect of change in volume due to plant expansion or acceptance of an order, with or without increase in costs or in other words

a quantum of profit to be obtained can be determined with change in volume of sales.

4. C.V.P. analysis helps in determining relative profitability of each product, line, project or profit plan.
5. Through cost volume-profit analysis inter-firm comparison of profitability can be done intelligently.
6. It helps in determining cash requirements at a desired volume of output, with the help of cash break-even charts.
7. Break-even analysis emphasises the importance of capacity utilisation for achieving economy.
8. From break-even analysis during severe recession, the comparative effects of a shut down or continued operation at a loss is indicated.
9. The effect on total cost of a change in the fixed over-head is more clearly demonstrated through break-even analysis and cost- volume-profit charts.
10. The conditions of a business such as profit potentialities, requirements of capital, financial stability and incidence of fixed and variable costs can be gauged from a study of the position of the break-even point and the angle of incidence in the break-even chart.

#### **18. ADVANTAGES OF BREAK-EVEN CHARTS**

- (i) It provides detailed and clearly understandable information. The chart visualises the information very clearly and a glance at the chart gives a vivid picture of the whole affairs. The information is presented in a simple form and therefore, is clearly understandable even to a layman.
- (ii) The profitability of different products can be known with the help of break-even charts, besides the level of no-profit no-loss. The problem of managerial decision regarding temporary or permanent shutdown of business or continuation at a loss can be solved by break-even analysis.
- (iii) The effect of changes in fixed and variable costs at different levels of production or profits can be demonstrated by the graph legibly.
- (iv) The break-even chart shows the relative importance of fixed cost in the total cost of a product. If the costs are high, it induces management to take measures to control such costs.
- (v) The economies of scale, capacity utilisation, comparative plant efficiencies can be analysed through the break-even chart. The operational efficiency of a plant is indicated by the angle of incidence formed at the intersection of the total cost line and sales line.
- (vi) Break-even analysis is very helpful for forecasting, long-term planning, growth and stability.

#### **19. LIMITATIONS OF BREAK-EVEN ANALYSIS/CHARTS**

Though break-even analysis has gradually become service tool for modern financial management, there are certain objections raised against the utility of break-even analysis:

- (i) Fixed costs do not always remain constant.

- (ii) Variable costs do not always vary proportionately.
- (iii) Sales revenue does not always change proportionately.
- (iv) The horizontal axis cannot measure the units sold in as much as many unlike type of products are sold by the same enterprise.
- (v) Break-even analysis is of doubtful validity when the business is selling many products with different profit margins.
- (vi) Break-even analysis is based on the assumption that income is influenced by changes in sales so that changes in inventory would not directly affect income. If marginal costing is used, this assumption would hold good but in other cases, changes in inventory will affect income because the absorption of fixed costs will depend on production rather than sales.
- (vii) Condition of growth or expansion in an organisation are not assumed under break-even analysis. In actual life of any business organisation, the operation undergoes a continuous process of growth and expansion.
- (viii) Only a limited amount of information can be presented in a single break-even chart. If we have to study the changes of fixed costs, variable costs and selling prices, a number of charts will have to be drawn up.
- (ix) Even simple tabulation of the results of costs and sales can serve the purpose which is served by a break-even chart, hence there is no need of presenting the data through a break-even chart.
- (x) The chart becomes very complicated and difficult to understand for a layman, if the number of lines or curves depicted on the graph are large.
- (xi) The chart does not provide any basis for comparative efficiency between different units or organisations.

#### LESSON ROUND UP



- Marginal cost is the cost of one unit of product or service which would be avoided if that unit were not produced or provided. In other words marginal cost is the amount at any given volume of output by which the aggregate costs are changed if the volume of output is increased or decreased by one unit.
- Marginal costing is the accounting system in which variable costs is charged to cost units and fixed costs of the period are written-off in full against the aggregate contribution. Its special value is in decision-making.
- Contribution or gross margin is the difference between sales and the marginal cost of sales. Fixed costs are written off against contribution during the period.

Thus:

Selling price – Variable cost = Contribution

Contribution – Fixed costs = Profit

Fixed costs + Profit = Contribution

Sales = Marginal costs + Fixed costs + Profit.

- Absorption costing is a method of costing by which all direct costs and applicable overheads are charged to products or cost centres for finding out the total cost of production. Absorbed cost includes production cost as well as administrative and other costs. It is a principle whereby fixed as well as variable costs are allotted to cost units, i.e. full costs are charged to production.
- Profit Volume Ratio (P/V Ratio) is the ratio or percentage of contribution margin to sales. i.e.

$$P / V \text{ ratio} = \frac{\text{Marginal Contribution}}{\text{Sales}}$$

or

$$\frac{\text{Change in Profits / Contributions}}{\text{Change in Sales}}$$

- Break-even analysis is the categorization of costs into variable and fixed elements and their relationship with sales and profits.
- Break-even point is the level of activity where total revenue equals the total costs (variable and fixed). It is that level of activity at which an enterprise makes neither a loss nor any profit. At break-even point, the sales revenues are just equal to the costs incurred. i.e.

$$\text{Break-even points} = \frac{\text{Total fixed costs}}{(\text{Selling price per unit} - \text{Marginal cost per unit})}$$

$$(\text{BEP}) \text{ units} = \frac{\text{Total fixed costs}}{\text{Contribution per unit}}$$

Or

$$\text{Break-even point (₹)} = \frac{\text{Fixed costs} \times \text{Sales}}{\text{Sales} - \text{Marginal cost}}$$

$$\text{Or} = \frac{\text{Fixed Cost}}{\text{P / V Ratio}}$$

$$\text{Or} = \text{Beak-even points (units)} \times \text{Selling price per unit}$$

- Break-even chart is graphic presentation showing approximate profit or loss of an organization at different levels of activity with in a limited range.
- Cash break-even point is the level of activity where there is neither a cash profit nor a cash loss.
- Profit volume graph is the graphical representation of the relationship between profit and volume.
- Margin of safety is the difference between the actual sales and sales at break-even point. Margin of safety is calculated as follows:

$$\text{Margin of safety} = \text{Total sales} - \text{Break even sales}$$

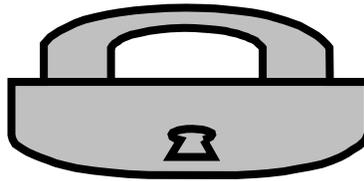
or

$$\text{Margin of safety} = \frac{\text{Profit}}{\text{P / V ratio}}$$

Margin of safety in percentage:

$$\frac{\text{Margin of safety} \times 100}{\text{Total sales}}$$

### SELF TEST QUESTIONS



1. Define marginal cost and marginal costing. How variable costs and fixed costs are treated in marginal costing?
2. What is contribution? How it is related to profits?
3. Explain the role of contribution technique in decision making, giving suitable illustrations.
4. –Fixed costs do not change with changes in volume and it is difficult for management to control them”. Discuss.
5. –While variable costs are fixed per unit of output, the fixed costs are variable per unit of output although all costs tend to be variable in the long run”. Explain.
6. What do you understand by P/V ratio? Discuss the importance of P/V ratio and state how P/V ratio can be improved?
7. What is a break-even chart? What is a profit graph? State the purposes of constructing such charts.
8. Taking suitable data construct a simple break-even chart and show the break-even point, angle of incidence and margin of safety on the chart.
9. Draw a break-even chart that will show contribution more clearly than the orthodox presentation. Mention two other forms of break-even charts.
10. State the limitations of break-even charts.
11. Construct a profit graph with suitable data and obtain an equation of the profit line. Use this equation to profit planning.
12. –The effect of a price reduction is always to reduce the P/V ratio to raise break-even point and to shorten the margin of safety”. Explain and illustrate by numerical examples.
13. (a) What do you understand by break-even point?  
(b) Explain the concept of break-even analysis.
14. (a) Distinguish between P/V ratio and break-even point?

- (b) Explain the uses of profit volume analysis.  
 (c) What are the limitations of break-even analysis?

15. Kaku Ltd. produces one standard type of article. The results of the last four months of the year 2010 are as follows:

	<i>Output units</i>
September, 2010	200
October, 2010	300
November, 2010	400
December, 2010	600

Prime cost is ₹10 per unit. Variable expenses are ₹2 per unit. Fixed expenses are ₹36,000 per annum. Find out the cost per unit in each month.

*[Ans.: September: ₹ 27.00, October: ₹ 22.00,  
 November: ₹ 19.50, December: ₹ 17.00].*

16. From the following data, which product would you recommend to be manufactured in a factory, time being the key factor?

	<i>Per unit of Product A</i>	<i>Per unit of Product B</i>
	₹	₹
Direct material	24	14
Direct labour (₹ 1 per hr.)	2	3
Variable overhead (₹ 2 per hr.)	4	6
Selling price	100	110
Standard time to produce	2 hrs.	3 hrs.

*[Ans.: Contribution per hour: A: ₹ 35 per hr., B: ₹ 29 per hr.  
 Therefore product 'A' is recommended].*

17. From the following information, find out the amount of profit earned during the year using the marginal costing technique:

Fixed cost	₹ 5,00,000
Variable cost	₹ 10 per unit
Selling price	₹ 15 per unit
Output level	1,50,000 units

*[Ans.: Profits: ₹ 2,50,000].*

18. From the following data, recommend the most profitable product mix, presuming that direct labour hours available are only 700:

	<i>Products</i>	
	A	B
Contribution per unit	₹ 30.00	₹ 20.00
Direct labour per unit	10 hrs.	5 hrs.

The maximum production possible for each of the products A and B is 100 units. Fixed overheads are ₹2,000.

[Ans.: Product A - 20 units, Product B - 100 units; Net Profit - ₹600].

19. A new firm commenced production on 1st July. During the 6 months to 31st December, it produced 1,00,000 units, selling 80,000 out of these @ ₹20 per unit. The total costs were the following:

	₹
Materials	6,00,000
Labour	4,00,000
Production Overheads	
Variable	3,00,000
Fixed	2,00,000
Administration and Selling expenses	1,50,000

Ascertain the profit under marginal costing and under absorption costing.

[₹2,10,000 and ₹2,50,000].

20. From the figures given below ascertain the marginal cost per unit:

	<i>October</i>	<i>November</i>
No. of units produced	10,000	9,000
Total cost of production	₹80,000	74,000

[₹6 per unit]

21. A factory produces 1,00,000 units and sells the whole quantity @ ₹25. The variable cost is ₹18 and the fixed cost is ₹5 per unit. An order is received for 20,000 units @ ₹26 per unit. State the circumstance(s) in which the order should be accepted.

(If there is idle capacity and if the order is from govt. or from abroad).

22. A company produces a component for its main product at a cost of ₹15 per unit — the operations are heavily mechanised. An outsider offers to supply the component at ₹14, should the offer be accepted? (No).
23. In a slump likely to last for one year, the available price is ₹20 per unit whereas the marginal cost is ₹22. Should production be suspended? (No).
24. You are given the following data for the coming year of a factory:

Budgeted output	80,000 units
Fixed expenses	₹4,00,000
Variable expenses per unit	₹10
Selling price per unit	₹20

Draw a break even chart showing the break-even point. If the selling price is reduced to ₹16 per unit what will be the new break-even point?

25. (a) Explain P/V ratio.  
(b) The sales turnover and profit during two periods were as follows:

Period No. 1	Sales ₹20 lakhs	Profit ₹2 lakhs
Period No. 2	Sales ₹30 lakhs	Profit ₹4 lakhs

(i) Calculate P/V Ratio, (ii) The sales required to earn a profit of ₹5 lakhs.

26. What do you understand by the term 'break-even point'? Mention the types of problems which an accountant can expect to solve with the help of such analysis.

You are required to calculate the break-even point in the following case:

The fixed costs for the year are ₹80,000, variable cost per unit for the single product is ₹4.

Estimated sales for the period are valued at ₹2,00,000. The number of units involved coincides with the expected volume of output. Each unit sells at ₹20.

27. From the following results of a company, determine by how much the value of sales must be increased for the company to break-even?

Net sales	₹4,00,000
Fixed costs	₹2,00,000
Variable costs	₹2,40,000

Use a break-even chart to illustrate the case.

28. Golden Ltd. has annual fixed cost of ₹1,20,000. In the year 2010 sales amounted to ₹6,00,000 as compared with ₹4,50,000 in 2009 and the profit for 2010 was ₹50,000 higher than in 2009. You are required to:

- (i) Estimate profits for 2011 on forecast sales volume of ₹8,40,000 on the assumption that this would not involve any addition to the company's capacity; and  
(ii) Calculate the break-even sales volume (in rupees)

[Ans.: (i) ₹1,50,000 (ii) ₹3,60,000].

29. Following informations are available from the cost records of a manufacturing company:

Fixed expenses	₹ 4,000
Break-even point	₹10,000

You are required to calculate:

- (i) P/V ratio  
(ii) Profit where sales are ₹20,000  
(iii) New break even point if selling price is reduced by 20%.

[Ans.: (i) 40%; (ii) ₹4,000; (iii) ₹16,000].

30. From the following information, calculate the break-even point and the turnover required to earn a profit of ₹36,000.

	₹
Fixed overheads	1,80,000
Variable cost per unit	2.00
Selling price	20.00

If the company is earning a profit of ₹36,000 express the margin of safety available to it.

[Ans.: 10,000 units; ₹2,40,000; ₹40,000].

31. Merry Manufacturers Ltd., has supplied you the following information in respect of one of its products:

Total fixed costs	18,000
Total variable costs	30,000
Total sales	60,000
Unit sold	20,000

Find out:

- (a) Contribution per unit,
- (b) Break-even point,
- (c) Margin of safety
- (d) Profit and
- (e) Volume of sales to earn a profit of ₹24,000.

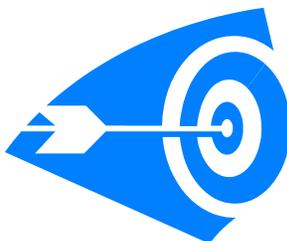
[Ans.: (a) ₹1.50; (b) 12,000 units; (c) 8,000 units;  
(d) ₹12,000; (e) 28,000 units].

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## STUDY XV

# ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS

### LEARNING OBJECTIVES



To understand the concept and nature of financial statements.

- Discuss the attributes of financial statements.
- Understand the objectives, importance and limitations of financial statements.
- Understand the recent trends in presenting the financial statements.
- Identify the types and methods of analyzing financial statements.
- Classify the accounting ratios in different categories.
- Compute various types of accounting ratios.
- Make critical analysis of financial statements on the basis of accounting ratios.
- Work out figures of profit and loss account and balance sheet from the given ratios and data.
- Identify the advantages and limitations of accounting ratios.

## 1. FINANCIAL STATEMENTS

Financial statements, as used in corporate business houses, refer to a set of reports and schedules which an accountant prepares at the end of a period of time for a business enterprise. The financial statements are the means with the help of which the accounting system performs its main function of providing summarised information about the financial affairs of the business. These statements comprise Balance Sheet or Position Statement and Profit and Loss Account or Income Statement. Of course to give a full view of the financial affairs of an undertaking, in addition to the above, the business may also prepare a Statement of Retained Earnings and a Cash Flow Statement. In India, every company has to present its financial statements in the form and contents as prescribed under Section 211 of the Companies Act 1956. The significance of these statements are given below:

- (i) *Balance Sheet or Position Statement:* Balance sheet is a statement showing the nature and amount of a company's assets on one side and liabilities and capital on the other. In other words, the balance sheet shows the financial position on a particular date usually at the end of one year period. Balance sheet shows how the money has been made available to the business of the company and how the money is employed in the business.

- (ii) *Profit and Loss Account or Income Statement:* Earning profit is the principal objective of all business enterprises and Profit and Loss account or Income Statement is the document which indicates the extent of success achieved by a business in meeting this objective. Profits are of primary importance to the Board of directors in evaluating the management of a company, to shareholders or potential shareholders in making investment decisions and to banks and other creditors in judging the loan repayment capacities and abilities of the company. It is because of this that the profit and loss or income statement is regarded as the primary statement and commands a careful scrutiny by all interested parties. It is prepared for a particular period which is mentioned alongwith the title of these statements, which includes the name of the business firm also.
- (iii) *Statement of Retained Earnings:* This statement is also known as Profit and Loss Appropriation Account and is generally a part of the Profit and Loss Account. This statement shows how the profits of the business for the accounting period have been utilised or appropriated towards reserves and dividend and how much of the same is carried forward to the next period. The term 'retained earnings' means the accumulated excess of earnings over losses and dividends. The balance shown by Profit and Loss Account is to be transferred to the Balance Sheet through this statement after making necessary appropriations.
- (iv) *Cash Flow Statement:* This is a statement which summarises for the period, the cash available to finance the activities of an organisation and the uses to which such cash have been put. A statement of cash flow reports cash receipts and payments classified according to the organisation's major activities i.e., operating activities, investing activities and financing activities. This statement reports the net cash inflow or outflow for each activity and for the overall business. The cash flow statement is to be prepared according to the Accounting Standard 3 (Revised) "Cash Flow Statement". The details of this statement have been discussed in a separate study.

## 2. NATURE OF FINANCIAL STATEMENTS

Financial statements are prepared for the purpose of presenting a periodical review or report on the progress by the management and deal with the (a) status of the investments in the business and (b) results achieved during the period under review. The data exhibited in these financial statements are the result of the combined effect of (i) recorded facts; (ii) accounting conventions; (iii) postulates or assumptions made to implement conventional procedures; (iv) personal judgements used in the applications of conventions and postulates and (v) accounting standards and guidance notes. These factors are explained below:

- (i) *Recorded Facts:* The term 'recorded facts' means, facts which have been recorded in the accounting books such as cash in hand, cash at bank, bills receivables, bills payable, debtors, creditors, fixed assets, sales, purchases, wages, capital and so forth. These items are listed on the basis of historical records of the transactions and valued at the price at which such transactions took place. Facts which have not been recorded in the accounting books are not depicted in the financial statements, however, material they might be.

- (ii) *Accounting Conventions*: Accounting conventions have reference to certain fundamental accounting principles, the applications of which has been sanctified by long usage. For example, on account of the convention of conservation, provision is made for expected losses but expected profits are ignored. These conventions are applied for the valuation of inventory, allocation of expenditure between capital and revenue for the purpose of assets valuations etc.
- (iii) *Postulates*: Accountants make various assumptions for the conventions adopted. One of these assumptions or postulates is to the effect that the enterprise will continue in business beyond the period which is covered by the financial statements, i.e., business is a going concern. This assumption is referred to as the permanency postulate, and the assets of the business are valued under this assumption at cost less depreciation. In absence of this assumption, the assets may have to be valued at realisable value which may be negligible if the business is not a going concern. Another postulate which accountants make is the monetary postulate. It is the tacit assumption that the value of money, that is its purchasing power, remains constant over different periods. The accountants do not take into consideration the price-level changes while valuing various assets in different periods. Of late, however, accountants in the west have shown growing consciousness for incorporating price-level changes while preparing financial statements. A third postulate is the realisation postulate which takes cognizance of the time lag between production and sales affected. Under this postulate entire revenue is considered to be earned at the moment the sales take place and not at the time when the production took place. This postulates forms the basis for the convention of matching costs with revenues, whereunder, the costs incurred in the past period are brought forward to be accounted for against the revenues earned at a later period.
- (iv) *Personal Judgements*: It may be noted that the application of conventions, assumptions or postulates depends on the personal judgements of the accountant. For example, the choice of selecting methods of depreciation, the mode of amortisation of fictitious assets, the method of valuation of stock, calculation of provision for doubtful debts etc. depend on the personal judgements of the accountant. However, the existence of consistency principle serves as a check on the power of the accountant to use his personal judgement. Since the accountant is guided by the past practices, the area of application of his personal judgement is reduced.
- (v) *Accounting Standards and Guidance Notes*: Accountants are guided by various accounting standards and guidance notes in preparing the financial statement.

### 3. ATTRIBUTES OF FINANCIAL STATEMENTS

Financial Statements prepared for an enterprise should possess the following attributes if they are to serve meaningfully the purpose and objectives for which they are meant:

- (a) *Relevance*: The financial statements prepared must be relevant for the purpose they are supposed to serve. While irrelevant and confusing

disclosures should be avoided, nothing relevant and material should be held back from the public. The accountant so compiles such statements should be clear about relevancy and materiality or otherwise of the various information on the basis of which these statements are prepared. The Companies Act in various countries provide for non-disclosure of certain material information.

- (b) *Accuracy and Freedom from Bias*: Financial Statements should convey a full and correct idea about the progress, position and prospects of an enterprise. For this purpose they must be accurately prepared. Inaccuracy, besides invoking legal consequences, may also defeat the objectives for which the statements are meant. It may, however, be noted that absolute accuracy is not always possible, but this does not mean that rash and inaccurate data be deliberately provided, The least one can expect is that those who prepare and present financial statements should not allow their personal prejudices to colour the facts.
- (c) *Comparability*: Comparability increases the utility of financial statements. Comparison with previous statements helps in assessing the performance and in localising the trends in the progress and position of the business enterprise. Comparisons with other similar concerns or the industry reveals the strength of the enterprise vis-a-vis other firms and industry.
- (d) *Analytical Presentation*: The financial statements should be prepared in a classified form so that a better and meaningful analysis can be made. Proper classification helps in tracing and understanding in causes of the results as shown in these statements. Detailed and classified information helps to reveal inefficient performance and wasteful activities. Such classification helps in speedier analysis of these documents.
- (e) *Promptness*: No doubt, that the preparation of financial statement is somewhat complicated, but an undue delay in their preparation would reduce the significance and utility of these statements. They should be prepared as soon as possible, after the end of the period for which they are meant. Undue delay, the time lag between the end of the period and the preparation of these statements, may present difficulty in tracing the causes of the results as disclosed by the statements. Such delays and the delayed action thereon, may do more harm than good to the enterprise.
- (f) *Generally Accepted Principles*: Since the financial statements are meant for the use of a wider clientele, they must have general acceptability and understandability. This acceptability and understandability can come only when these statements are prepared in accordance with the "generally accepted accounting principles". This also increases the reliability of these statements and adds to the confidence of the users.
- (g) *Consistency*: The financial statements for a certain period are affected by the judgment and procedural choices exercised by the accountant. Opinions and procedures other than those employed generally, might cause the statement data to differ materially. Rules of accounting require that having made a selection of procedures, the accountant must strictly follow them in successive periods, unless the situation demands otherwise. Consistency

has a direct bearing upon comparability. If inventories are valued on different basis in different periods (LIFO to FIFO to Replacement Cost) the results disclosed, generate doubt and comparison becomes difficult.

- (h) *Authenticity*: The financial statements in order to be accepted as reliable must be reviewed and authenticated by an independent and capable person, generally known as auditor. Statements, duly audited and certified by recognised and established auditors are accepted at their face value and are deemed to be more reliable. Unaudited statements give room to doubt and unreliability.
- (i) *Compliance with Law*: Financial statements must meet the requirements of law, if any, in the matter of form, contents and disclosures, procedures and methods. Non-compliance with legal provisions, besides invoking penalties, impairs the confidence of the public investors. In India, companies are required to present their financial statements according to the provisions of Section 211 of the Companies Act, 1956.

#### **4. OBJECTIVES OF FINANCIAL STATEMENTS**

The number and types of people interested in financial statements have changed radically in recent times. Financial statements are necessary for shareholders and potential shareholders, in addition to management and creditors.

The following groups have a direct interest in the financial statements of companies: Suppliers and potential suppliers of funds, i.e., shareholders, debentureholders, employees, customers, suppliers of goods and services on credit, tax authorities, etc. In addition, there are groups which have an indirect interest in these statements: Financial analysts and advisors, stock exchanges, academicians, lawyers, regulatory authorities, trade associations, and labour unions.

It is to be readily conceded that firstly it is not feasible to prepare sets of financial statements for the different parties interested in them and secondly, it is virtually impossible to prepare such a financial statement as will provide all the information required by all the interested parties. There has to be a compromise in the preparation of financial statements - there will be and can be only one set and it will have to be oriented towards the needs of the shareholders but it must give such significant and material information as is practicable for the benefit of the other parties specially those who have to make decisions about the future of the concerned firm, specially debenture-holders, institutional lenders, operators on the stock exchange etc. Fortunately, the needs of information may be grouped under the heads (i) profit and profitability; (ii) short-term financial position (liquidity); and (iii) long-term financial position. Every one interested in a firm directly wants to know the extent of cash flows, as far as he is interested, expected in the time-span of interest to him. For example, a shareholder wants to estimate the cash dividend that his shares will bring as well as the amount that he can realise on sale of the shares - for the dividend, his time-span is one year; a supplier of goods on credit wants whether his dues will be paid within say a month or two. These broad needs of information can well be satisfied by a single set of financial statements.

The objectives of financial statements can be summarized as follows:

1. To provide reliable financial information about economic resources and obligations of a business enterprise.
2. To provide reliable information about the net resources (resources less obligations) of an enterprise that results from its activities.
3. To provide financial information that assists in estimating the earning potentials of a business.
4. To provide other needed information about changes in economic resources or obligation.
5. To disclose, to the extent possible, other information related to the financial statements that is relevant to the needs of the users of these statements.

In order to meet the above objectives and to suit the needs of the varied users, the accountant entrusted with the task of compiling and presenting financial statements must follow a set of guidelines to ensure consistency, completeness, and fairness of the statements. These guidelines are called “generally accepted accounting principles”. In absence of these „generally accepted accounting principles’ statements prepared may be un-understandable and misleading for the various groups of users. In addition to this, the financial statements prepared must also be authenticated as to their accuracy and fairness so that the confidence of the users is invoked. For this purpose it is necessary that these statements be reviewed and certified by an independent reviewer, commonly known as auditor.

## **5. IMPORTANCE OF FINANCIAL STATEMENTS**

The most important objective of financial statements is to present information for the use of different categories of persons as mentioned below:

1. *The Management:* The scope of modern business and the multiplicity of factors affecting the business operations call for an increasingly scientific and analytical approach in the management of such businesses. This is possible only when up-to-date, accurate and systematic financial records are available to the management team. Financial accounts and statements are of a very great help in understanding the progress, position and prospects of the business vis-a-vis the industry. Financial statements, by helping the management to be acquainted with the causes of the business results, enable them to formulate appropriate policies and courses of action for the future. Not only such financial statements - which are generally made public, but unpublished subsidiary accounts and statements also play an important role in policy-making and planning. Such subsidiary records provide more detailed, frank and revealing information than the financial statements. A comparative analysis of financial statements should enable management to see the trends in the progress and position of the enterprise and make suitable modifications in policies to avert unfavourable situations. It is through the release of such financial statements that the managements communicate their performance to various parties and justify their existence, and activities.
2. *The Public:* Business is a social entity. Various groups of the society, though not directly connected with business, are interested in the progress, position

and prospects of a business enterprise. These groups are financial analysts, lawyers, trade associations, labour unions, financial press, students and teachers, etc. It is only through the published financial statements that these people can analyse, judge and comment upon the business enterprise. It should be noted that these financial statements are available to the public in case of joint stock companies. In case of proprietorships or partnerships, and other form of ownership no such statements are published or made available to the public.

3. *The Shareholders and the Lenders:* The financial statements serve as a useful guide for the shareholders and probable shareholders, the suppliers, and the lenders and probable lenders of a company. It is through a critical examination of the financial statements that these groups can come to know about the efficiency and effectiveness of the management and position, progress and prospects of the company. For this purpose, it is necessary that the financial statements should contain accurate, complete and systematic facts and figures so that these people can get a full and accurate idea regarding the present position and future of the company. Since published financial statements are the main bases available to such group of people to judge the affairs of the company, it has been found that some managements have been resorting to „window dressing’ in the presentation of these statements, to project a “better” than “what is” the position of the company.
4. *The Labour and Trade Unions:* In India, workers are entitled to bonus under the Payment of Bonus Act, depending upon the size of the profit as disclosed by audited Profit and Loss Account. Thus, the Profit and Loss Account becomes greatly important to the workers. In wage negotiations also, the size of profits and the profitability achieved are greatly relevant.
5. *The Country and Economy:* Economic progress of country is to a great extent, associated with the rise and growth of joint stock companies. The divergence between ownership and management of such companies has provided an opportunity for unscrupulous and fraudulent persons to cheat and defraud the public. Such unscrupulous acts affect the industry and people in the region in which the company operates, to a significant extent. Such fraudulent activities impair the confidence of the general public in joint stock companies as forerunner of economic progress, and thus retard economic growth of the country. The solution lies in raising the level of business and financial morality of the promoters and managements and in imparting knowledge about financial statements to the public so that they can examine and assess the real worth of the company and avoid being cheated by unscrupulous persons. The law endeavours to raise the level of business morality by compelling the companies to draw up financial statements in a clear systematic form and disclose certain minimum information. Such provisions increase the confidence of the public in joint stock companies, thus enabling faster economic progress of the country. This has all the more greater significance in under developed and developing countries. In such countries, capital is not only scarce but also shy. Malpractices on the part of promoters and managements, only help to increase the scarcity and shyness of capital, thus blocking economic progress. Published financial statements provide an opportunity for the critical assessment of the worth of company

and thus protect innocent public, increase their confidence, and help faster economic progress.

Financial statements are also valuable for the various regulatory authorities. They can judge whether the regulations are being followed in word and spirit, and also whether the regulations are producing the desired effect or not, by evaluating the financial statements submitted by the companies.

## **6. LIMITATIONS OF FINANCIAL STATEMENTS**

Financial statements are the result of the accounting process which begins with recording of transactions. Accounting process involves recording, classifying and summarising business transactions. Financial statements are the result of the third process viz. summarising. The financial statements are based on certain accounting concepts and conventions which can not be said to be foolproof.

The following are the limitations of the financial statements:

- (i) Financial statements are essentially interim reports and therefore, cannot be final because the final gain or loss can be computed only at the termination of the business. Financial statements only reflect the progress and position of the business at frequent intervals during its life. The decision regarding the period of these statements is a matter of personal judgement and it gives rise to the problem of allocating expenditures over various periods. Again the existence of contingent liabilities, deferred revenue expenditure make them more imprecise.
- (ii) Financial statements though expressed in exact monetary terms, are not absolutely final and accurate. As the balance sheet is prepared on the basis of a going concern asset valuation represents neither the realisable value nor replacement costs. Further, they depend on the judgement of the management in respect of various accounting policies.
- (iii) The values ascribed to the assets presented in the statements depend upon the standards of the persons dealing with them. For instance, the method of depreciation, mode of amortisation of fixed assets, treatment of deferred revenue expenditure, all depend on the personal judgement of the accountant. The soundness of such judgement will necessarily depend upon his competence and integrity.
- (iv) Financial statements take into consideration only the financial factors. They fail to bring out the significance of non-financial factors which may have considerable bearing on the operating results and financial conditions of an enterprise. For example, public image of the enterprise, the calibre of its management, efficiency and loyalty of its workers etc.
- (v) It is not always possible to discover false figures in financial statements. Unscrupulous managements generally resort to „window dressing’ in the preparation of such statements.
- (vi) Financial statements are prepared primarily for shareholders. Other interested parties have to generally make many adjustments before they use them profitably.

- (vii) Quite often, financial statements do not disclose current worth of the business. Only historical facts are presented and the true current worth is not reflected.
- (viii) Owing to the fact that financial statements are compiled, on the basis of historical costs, while there is a marked decline in the value of the monetary unit and resultant rise in prices, the balance sheet loses its function as an index on current economic realities. Again the financial statements contain both historical and current costs items, hence figures are distorted. It is seen that holding gains and operating gains are added together, no differentiation is made between these two.

## 7. RECENT TRENDS IN PRESENTING FINANCIAL STATEMENTS

In India every company has to present its financial statements in the form and contents as prescribed under Section 211 of the Companies Act, 1956. Keeping in view the complications of statutory forms in the Companies Act, now-a-days it is common practice to add the profit and loss account and balance sheet drawn in statutory forms, some voluntary supplementary information in a simple manner as would be easily understood by a layman. This voluntary information may include the following:

- (i) *Summarised profit and loss account and balance sheet:* Now-a-days, companies are discarding the preparation of traditional two sided balance sheet and profit and loss account and are following columnar forms of balance sheet and profit and loss account which are simple way of presentation of information.
- (ii) *Highlights:* Highlights are usually shown at the beginning of the annual report so that the users may come across the important facts of the company immediately as he opens the report. It may usually cover information about sales, production, profit before and after tax, capital projects, working capital, fixed assets, share capital, important landmarks of the year, etc.
- (iii) *Cash flow statements:* The preparation of cash flow statement has become mandatory now-a-days. A statement of cash flow, reports the cash receipts, cash payments and net changes in cash resulting from operating, investing and financing activities of an enterprise during a period in a format that reconciles the beginning and ending cash balances. It reports a net cash inflow or outflow for each activity and for the overall business.
- (iv) *Provision of important accounting ratios:* Accounting ratios show the inter-relationship which exists among various accounting data. Balance sheet is substantiated by the important ratios of the current year and of the last two years.
- (v) *Disclosure of accounting policies:* Presently, progressive companies disclose accounting policies in their published accounts on the basis of which they have prepared their financial statements. This is done with a view to giving better understanding of the financial statements to the public.
- (vi) *Use of charts, graphs and diagrams:* Many companies incorporate charts, graphs and diagrams in their published accounts. It is known as graphic method of presentation of information. It attracts the attention of the users

more quickly and forcibly. Recently, graphs and diagrams have been becoming very popular because they are considered to be the most effective media for disclosing trends and making comparisons over fairly long periods within a short space. The method of presenting information can effectively depict production costs, fluctuations in output and sales, components of cost of production and income, use of divisible profits as taxes, dividends, other appropriations and retained profits etc.

- (vii) *Use of schedules:* In order to make the balance sheet and profit and loss account as compact as possible, separate schedules for different heads (e.g. share capital, reserves and surplus, secured loans, unsecured loans, current liabilities and provisions, fixed assets, investments, current assets, loans and advances, miscellaneous expenditure, etc.) are prepared and details regarding these heads as prescribed in the Companies Act are given in these schedules. This is done to make the balance sheet and profit and loss account manageable within limited space. These schedules are properly numbered and reference of these is given in the balance sheet and profit and loss account.
- (viii) *Impact of price level changes:* Since prices go on changing every day, financial statements based on historical costs do not reflect the effect of price level changes on the financial position and profitability of the company. In order to accommodate the effect of price level changes in the financial statements now-a-days many companies have started showing this effects on financial statements in a supplementary statement in addition to the conventional statements prepared on historical basis.
- (ix) *Rounding off of figures:* The Sachhar Committee has recommended that companies should be given the option to round off the figures of financial statements to the nearest thousand and/or hundred or ten rupees. This recommendation has been accepted and companies are now-a-days making use of rounding off of figures.

## 8. ANALYSIS OF FINANCIAL STATEMENTS

Published financial statements are the only source of information about the activities and affairs of a business entity available to the public, shareholders, investors and creditors, and the governments. These various groups are interested in the progress, position and prospects of such entity in various ways. But these statements howsoever, correctly and objectively prepared, by themselves do not reveal the significance, meaning and relationship of the information contained therein. For this purpose, financial statements have to be carefully studied, dispassionately analysed and intelligently interpreted. This enables a forecasting of the prospects for future earnings, ability to pay interest, debt maturities both current as well as long-term, and probability of sound financial and dividend policies. According to Myers, "financial statement analysis is largely a study of relationship among the various financial factors in business as disclosed by a single set of statements and a study of the trend of these factors as shown in a series of statements".

Thus, analysis of financial statements refers to the treatment of information contained in the financial statement in a way so as to afford a full diagnosis of the profitability and financial position of the firm concerned.

The process of analysing financial statements involves the rearranging, comparing and measuring the significance of financial and operating data. Such a step helps to reveal the relative significance and effect of items of the data in relation to the time period and/or between two organisations.

Interpretation, which follows analysis of financial statements, is an attempt to reach to logical conclusion regarding the position and progress of the business on the basis of analysis. Thus, analysis and interpretation of financial statements are regarded as complimentary to each other.

## **9. TYPES OF FINANCIAL STATEMENT ANALYSIS**

A distinction may be drawn between various types of financial analysis either on the basis of material used for the same or according to the *modus operandi* or according to the objective of the analysis.

### **9.1 According to Nature of the Analyst and the Material used by him**

1. *External Analysis*: It is made by those who do not have access to the detailed records of the company. This group, which has to depend almost entirely on published financial statements, includes investors, credit agencies and governmental agencies regulating a business in nominal way. The position of the external analyst has been improved in recent times owing to the governmental regulations requiring business undertaking to make available detailed information to the public through audited accounts.
2. *Internal Analysis*: The internal analysis is accomplished by those who have access to the books of accounts and all other information related to business. While conducting this analysis, the analyst is a part of the enterprise he is analysing. Analysis for managerial purposes is an internal type of analysis and is conducted by executives and employees of the enterprise as well as governmental and court agencies which may have regulatory and other jurisdiction over the business.

### **9.2 According to *Modus Operandi* of Analysis**

1. *Horizontal Analysis*: When financial statements for a number of years are reviewed and analysed, the analysis is called 'horizontal analysis'. As it is based on data from year to year rather than on one date or period of time as a whole, this is also known as 'dynamic analysis'. This is very useful for long term trend analysis and planning.
2. *Vertical Analysis*: It is frequently used for referring to ratios developed for one date or for one accounting period. Vertical analysis is also called 'Static Analysis'. This is not very conducive to proper analysis of the firm's financial position and its interpretation as it does not enable to study data in perspective. This can only be provided by a study conducted over a number of years so that comparisons can be effected. Therefore, vertical analysis is not very useful.

### **9.3 According to the Objective of the Analysis**

On this basis the analysis can be long-term and short-term analysis:

- (a) *Long-term Analysis*: This analysis is made in order to study the long-term

financial stability, solvency and liquidity as well as profitability and earning capacity of a business. The objective of making such an analysts is to know whether in the long-term the concern will be able to earn a minimum amount which will be sufficient to maintain a reasonable rate of return on the investment so as to provide the funds required for modernisation, growth and development of the business.

- (b) *Short-term Analysis*: This analysis is made to determine the short-term solvency, stability, liquidity and earning capacity of the business. The objective is to know whether in the short-run a business enterprise will have adequate funds readily available to meet its short-term requirements and sufficient borrowing capacity to meet contingencies in the near future.

## **10. METHODS OF ANALYSING FINANCIAL STATEMENTS**

The analysis of financial statements consists of a study of relationship and trends, to determine whether or not the financial position and results of operations as well as the financial progress of the company are satisfactory or unsatisfactory. The analytical methods or devices, listed below, are used to ascertain or measure the relationships among the financial statements items of a single set of statements and the changes that have taken place in these items as reflected in successive financial statements. The fundamental objective of any analytical method is to simplify or reduce the data under review to more understandable terms.

Analytical methods and devices used in analysing financial statements are as follows:

1. Comparative Statements
2. Common Size Statements
3. Trend Ratios
4. Ratio Analysis
5. Cash Flow Statements.

### **10.1 Comparative Statements**

These financial statements are so designed as to provide time perspective to the various elements of financial position contained therein. These statements give the data for all the periods stated so as to show:

- (a) Absolute money values of each item separately for each of the periods stated.
- (b) Increase and decrease in absolute data in terms of money values.
- (c) Increase and decrease in terms of percentages.
- (d) Comparison expressed in ratios.
- (e) Percentages of totals.

Such comparative statements are necessary for the study of trends and direction of movement in the financial position and operating results. This calls for a

consistency in the practice of preparing these statements, otherwise comparability may be distorted. Comparative statements enable horizontal analysis of figures.

(a) Comparative Balance Sheet: A comparative balance sheet shows the balance of accounts of assets and liabilities on different dates and also the extent of their increases or decreases between these dates throwing light on the trends and direction of changes in the position over the periods. This helps in predicting about the position of the business in future. A specimen of the comparative balance sheet is given below:

**Edulji & Sons Ltd.**  
**Comparative Balance Sheet**  
**(as on 31st March, 2010 and 2011)**

<i>Particulars</i>	<i>31.3.2010</i>	<i>31.3.2011</i>	<i>Increase (+) or Decrease (-) in amounts</i>	<i>Increase (+) or Decrease (-) in %age</i>
	₹	₹	₹	
<b>Current Assets</b>				
Cash in hand and at bank	1,18,000	10,000	(-)1,08,000	(-) 92
Receivable on customer's accounts and bills	2,09,000	1,90,000	(-) 19,000	(-) 9
Inventory of materials, goods in process and finished stock	1,60,000	1,30,000	(-) 30,000	(-) 19
Prepaid expenses	3,000	3,000	—	—
Other current assets	29,000	10,000	(-) 19,000	(-) 66
<b>Total Current Assets</b>	<b>5,19,000</b>	<b>3,43,000</b>	<b>(-)1,76,000</b>	<b>(-) 34</b>
<b>Fixed Assets</b>				
Land and buildings	2,70,000	1,70,000	(-) 1,00,000	(-) 37
Plant and machinery	3,10,000	7,86,000	(+ ) 4,76,000	(+ ) 150
Furniture and fixtures	9,000	18,000	(+ ) 9,000	(+ ) 100
Other fixed assets	20,000	30,000	(+ ) 10,000	(+ ) 50
<b>Total Fixed Assets</b>	<b>6,09,000</b>	<b>10,04,000</b>	<b>(+) 3,95,000</b>	<b>(+) 65</b>
Investments	46,000	59,000	(+ ) 13,000	(+ ) 28
<b>Total Assets</b>	<b>11,74,000</b>	<b>14,06,000</b>	<b>(+) 2,32,000</b>	<b>(+) 20</b>
<b>Liabilities and Capital</b>				
<b>Current Liabilities</b>				
Accounts payable (sundry trade creditors and bills payable)	2,55,000	1,17,000	(-)1,38,000	(-) 54
Other short-term liabilities	7,000	10,000	(+ ) 3,000	(+ ) 43
<b>Total Current Liabilities</b>	<b>2,62,000</b>	<b>1,27,000</b>	<b>(-)1,35,000</b>	<b>(-) 52</b>

Debentures	50,000	1,00,000	(+) 50,000	(+) 100
Long-term loans on mortgage	1,50,000	2,25,000	(+) 75,000	(+) 50
Total Liabilities	<u>4,62,000</u>	<u>4,52,000</u>	(-) 10,000	(-) 2

**Capital**

Equity share capital	4,00,000	6,00,000	(+)2,00,000	(+) 50
Reserve and surplus	<u>3,12,000</u>	<u>3,54,000</u>	(+) 42,000	(+) 13
Total Liabilities and Capital	<u>11,74,000</u>	<u>14,06,000</u>	(+)2,32,000	(+) 20

An analysis and interpretation of the above balance sheet reveals:

1. Current assets have decreased by ₹1,76,000 between 2010 and 2011, while current liabilities have decreased only by ₹1,35,000. But this has no adverse affect on current ratio because the percentage decrease in current assets (34%) is much less than the percentage decrease in current liabilities (52%).
2. Non current assets have increased by ₹3,95,000, major increase being a plant and machinery of ₹4,76,000, which amounts to the increase in production and profit earning capacities. Increase in fixed assets appears to have been partly financed by an increase in equity capital (₹2,00,000), partly by release of working capital, and partly by increase in debentures and long-term borrowings (₹1,25,000).
3. The increase in reserves and surpluses (₹42,000) may be the result of profits retained, and has gone to account for increase in long-term loans and fixed assets.
4. There has been a drastic fall in cash balance (₹1,08,000). This reflects an adverse cash position.

(b) *Comparative Profit and Loss Account or Income Statement:* Comparative income statement shows the operating results for a number of accounting periods and changes in the data significantly in absolute periods and changes in the data significantly in absolute money terms as well as in relative percentage. A specimen income statement is given below:

**Edulji & Sons Ltd.**  
**Comparative Statement of Income**  
**(for year ended 31st March, 2010 and 2011)**

	31.3.2010	31.3.2011	Amount of (+) increase or decrease (-) during 2010-11	Percentage (+) increase or decrease (-) during 2010-11
(1)	(2)	(3)	(4)	(5)
	₹	₹	₹	
Net sales	8,50,000	9,52,000	(+) 1,02,000	(+) 12
Cost of goods sold	5,25,000	6,00,000	(+) 75,000	(+) 14.3
Gross Profit on Sales	<u>3,25,000</u>	<u>3,52,000</u>	(+) 27,000	(+) 8.3

	(1)	(2)	(3)	(4)	(5)
<i>Operating Expenses:</i>					
Selling Expenses					
Advertising	15,000	20,000	(+)	5,000	(+) 33.3
Delivery expenses	20,000	18,000	(-)	2,000	(-) 10
Salesmen salaries and Commission	1,50,000	1,53,000	(+)	3,000	(+) 2
Packing and freight expenses	14,000	15,000	(+)	1,000	(+) 7
Other selling expenses	20,000	23,000	(+)	3,000	(+) 15
Total Selling Expenses	<u>2,19,000</u>	<u>2,29,000</u>	(+)	<u>10,000</u>	<u>(+) 4.5</u>
<i>General and Administrative Expenses</i>					
Office salaries	58,000	63,800	(+)	5,800	(+) 10
Office expenses	2,000	4,000	(+)	2,000	(+) 100
Stationery and postage	1,000	2,000	(+)	1,000	(+) 100
Insurance	2,000	1,000	(-)	1,000	(-) 100
Doubtful debts	<u>3,000</u>	<u>4,000</u>	(+)	<u>1,000</u>	<u>(+) 33</u>
Total administrative and general expenses	66,000	74,800	(+)	8,800	(+) 13.3
Total Operating Expenses	<u>2,85,000</u>	<u>3,03,800</u>	(+)	<u>18,800</u>	<u>(+) 6.6</u>
Operating Profit	<u>40,000</u>	<u>48,200</u>	(+)	<u>8,200</u>	<u>(+) 20.5</u>
<i>Other Incomes</i>					
Interest income	12,000	12,000	-	--	-
Rent income	8,000	16,000	(+)	8,000	(+) 100
Discount received	12,000	18,000	(+)	6,000	(+) 50
Total Other Incomes	<u>32,000</u>	<u>46,000</u>	(+)	<u>14,000</u>	<u>(+) 43.7</u>
Total of Operating Profit and Other Income	<u>72,000</u>	<u>94,200</u>	(+)	<u>22,200</u>	<u>(+) 30.8</u>
<i>Other Expenses</i>					
Interest expense	26,000	17,000	(-)	9,000	(-) 34.6
Sales discount	8,000	7,000	(-)	1,000	(-) 12.5
Total Other Expenses	<u>34,000</u>	<u>24,000</u>	(-)	<u>10,000</u>	<u>(-) 29.4</u>
Income before income tax	38,000	70,200	(+)	32,200	(+) 84.7
Income tax	19,000	31,000	(+)	12,000	(-) 63.1
Income after Income Tax	<u>19,000</u>	<u>39,200</u>	(+)	<u>20,200</u>	<u>(+) 106.3</u>

A study of the income statements reveals that there has been an increase of

₹1,02,000 in sales, but at the same time cost of goods sold has also increased by ₹75,000. In relative terms sales increased by 12% while cost of goods sold by 14.3%. It means either the addition in sales has been due to lowering of sales price or the increase in cost is due to operational inefficiency. Similarly, increase in advertising has been much more (33%) than the increase in sales (12%). But in absolute terms the amount of increase is only ₹5,000. Operating profits have shown an increase of 20.5% over 2010-11 but in absolute terms profits have increased only by ₹8,200.

There has been a substantial increase in other incomes both in relative (43.7%) as well as absolute terms (₹14,000). Similarly, there has been substantial decrease in other expenses (29.4% and ₹10,000). These items have gone to increase the total income before tax for the year by ₹32,200, thus reflecting that the management has been more concerned for the other incomes than the operating profits.

## 10.2 Common-Size Statements

In the comparative financial statements it is difficult to comprehend the changes over the years in relation to total assets, total liabilities and capital or total net sales. This limitation of comparative statements make comparison between two or more firms of an industry impossible because there is no common base of comparison for absolute figures. Again, for an interpretation of underlying causes of changes over time period a vertical analysis is required and this is not possible with comparative statements.

Common size financial statements are those in which figures reported are converted into percentages to some common base. For this, items in the financial statements are presented as percentages or ratios to total of the items and a common base for comparison is provided. Each percentage shows the relation of the individual item to its respective total.

- (a) *Common-size Income Statement:* In a common size income statement the sales figure is assumed to be equal to 100 and all other figures of costs or expenses are expressed as percentages of sales. A comparative income statement for different periods helps to reveal the efficiency or otherwise of incurring any cost or expense. If it is being prepared for two firms, it shows the relative efficiency of each cost item for the two firms.
- (b) *Common-size Balance Sheet:* In a common size balance sheet, total of assets or liabilities is taken as 100 and all the figures are expressed as percentage of the total. Comparative common size balance sheets for different periods help to highlight the trends in different items. If it is prepared for different firms in an industry, it facilitates to judge the relative soundness and helps in understanding their financial strategy.

A comparative common-size income statement and balance sheet for two firms in an industry is illustrated below:

**Old Guards and Young Ones Companies**  
**Comparative Income Statement**  
**Period ending 31st March, 2011**

	<i>Old Guards Co.</i>		<i>Young Ones Co.</i>	
	<i>Amount</i> ₹	<i>% of</i> <i>sales</i>	<i>Amount</i> ₹	<i>% of</i> <i>sales</i>
Net sales	25,38,000	100.0	9,70,000	100.0
Cost of goods sold	14,22,000	56.0	4,75,000	49.0
Gross Profit on Sales	<u>11,16,000</u>	<u>44.0</u>	<u>4,95,000</u>	<u>51.0</u>
Selling expenses	7,20,000	28.4	2,72,000	28.0
General and administrative Expenses	<u>1,84,000</u>	<u>7.2</u>	<u>97,000</u>	<u>10.0</u>
Total Operating Expenses	<u>9,04,000</u>	<u>35.6</u>	<u>3,69,000</u>	<u>38.0</u>
Operating profit	2,12,000	8.4	1,26,000	13.0
Other income	<u>26,000</u>	<u>1.0</u>	<u>10,000</u>	<u>1.0</u>
	2,38,000	9.4	1,36,000	14.0
Other expenses	<u>40,000</u>	<u>1.6</u>	<u>29,000</u>	<u>3.0</u>
Income before tax	1,98,000	7.8	1,07,000	11.0
Income-tax	<u>68,000</u>	<u>2.7</u>	<u>28,000</u>	<u>2.9</u>
Net Income after tax	<u>1,30,000</u>	<u>5.1</u>	<u>79,000</u>	<u>8.1</u>

**Comparative Balance Sheets**  
**As on 31st March, 2011**

	<i>Old Guards Co.</i>		<i>Young Ones Co.</i>	
	<i>Amount</i> ₹	<i>% of</i> <i>total</i>	<i>Amount</i> ₹	<i>% of</i> <i>total</i>
<b>Assets</b>				
<b>Current Assets:</b>				
Cash	54,000	2.7	72,000	7.0
Sundry debtors	4,40,000	22.0	2,26,000	22.0
Trading stock	2,00,000	10.0	1,74,000	17.0
Prepaid expenses	22,000	1.0	21,000	2.0
Other current assets	<u>20,000</u>	<u>1.0</u>	<u>21,000</u>	<u>2.0</u>
Total Current Assets	7,36,000	36.7	5,14,000	50.0
Fixed Assets (less accumulated depreciation)	12,70,000	63.3	5,13,000	50.0
Total	<u>20,06,000</u>	<u>100.0</u>	<u>10,27,000</u>	<u>100.0</u>

## Liabilities and Capital:

## Current Liabilities:

Sundry creditors	84,000	4.2	1,34,000	13.0
Other current liabilities	<u>1,56,000</u>	<u>7.8</u>	<u>62,000</u>	<u>6.0</u>
Total Current Liabilities	2,40,000	12.0	1,96,000	19.0
Mortgage debentures	<u>4,50,000</u>	<u>22.4</u>	<u>3,18,000</u>	<u>31.0</u>
Total Liabilities	6,90,000	34.4	5,14,000	50.0
Capital and reserves	13,16,000	65.6	5,13,000	50.0
Total Liabilities and Capital	<u>20,06,000</u>	<u>100.0</u>	<u>10,27,000</u>	<u>100.0</u>

The following conclusions can be drawn from a careful analysis of the above financial statements:

- (1) Old Guards company has a better and efficient credit and collection system because its debtors and trading stock amounts to 32% of total assets as compared to 39% in case of Young Ones Company.
- (2) The cash position of Young Ones Company (7% of total assets) compares favourably with that of Old Guards (2.7%).
- (3) The turnover of Old Guards is larger (₹25,38,000) than Young Ones Company (₹9,70,000), but the cost of goods absorbs a larger i.e. 56% of net sales compared to 49% in case of Young Ones Company. This reflects a better pricing mark-up by Young Ones.
- (4) The selling, and administrative and general expenses are 35.6% of net sales in case of Old Guards while 38% in case of Young Ones. Administration costs in Young Ones is higher as compared to Old Guards, reflecting a highly paid or over staffed administrative function.
- (5) Old Guards appear to be more traditionally financed with shareholders equity of 65.6% of total liabilities as against 50% in case of Young Ones. This reflects the financial value ability of Young Ones.
- (6) The fixed assets of Old Guards company is larger (₹12,70,000) than of Young Ones Company (₹5,13,000). But, if this is compared with turnover that of the two companies, we find that Old Guards has a lower asset turnover (50%) than that of Young Ones Company (53%). This reflects a better asset utilisation by Young Ones Company.

### 10.3 Trend Ratios

Trend ratios can be defined as index numbers of the movements of the various financial items in the financial statements for a number of periods. It is a statistical device applied in the analysis of financial statements to reveal the trend of the items with the passage of time. Trend ratios show the nature and rate of movements in various financial factors. They provide a horizontal analysis of comparative statements and reflect the behaviour of various items with the passage of time. Trend ratios can be graphically presented for a better understanding by the management. They are very useful in predicting the behaviour of the various financial factors in future. However, it should be noted that conclusions should not be drawn on the basis of a single trend. Trends of related items should be carefully studied, before

any meaningful conclusion is arrived at. Since trends are sometimes significantly affected by externalities, i.e. reasons extraneous to the organisations, the analyst must give due weightage to such extraneous factors like government policies, economic conditions, changes in income and its distribution, etc.

*Computation of Trend Percentages:* For calculation of the trend of data shown in the financial statements, it is necessary to have statements for a number of years, and then proceed as under:

- (1) Take one of the statements as the base with reference to which all other statements are to be studied. In selection of the best statement, it should be noted that it belongs to a 'normal' year of business activities. Statement relating to an 'abnormal' year should not be selected as base, otherwise the trend calculated will be meaningless.
- (2) Every item in the base statement is stated as 100.
- (3) Trend percentage of each item in other statement is calculated with reference to same item in the base statement by using the following formula:

$$\frac{\text{Absolute Value of item (say cash) in other statements}}{\text{Absolute Value of same item (cash) in base statement}} \times 100$$

*Limitations of Trend Ratios:* It should be noted that trend ratios are not calculated for all items. They are calculated only for logically connected items enabling meaningful analysis. For example, trend ratios of sales become more revealing when compared with the trend ratios of fixed assets, cost of goods sold and operating expenses. Trend ratios have the following limitations:

- (a) If the accounting practices have not been consistently followed year after year, these ratios become incomparable and thus misleading.
- (b) Trend ratios do not take into consideration the price level changes. An increasing trend in sales might not be the result of larger sales volume, but may be because of increased sales price due to inflation. In order to avoid this limitation, figures of the current year should be first adjusted for price level changes from the base year and then the trend ratios be calculated.
- (c) Trend ratios must be always read with absolute data on which they are based, otherwise the conclusions drawn may be misleading. It may be that a 100% change in trend ratio may represent an absolute change of ₹1,000 only in one item, while a 20% change in another item may mean an absolute change of ₹1,00,000.
- (d) The trend ratios have to be interpreted in the light of certain non-financial factors like economic conditions, government policies, management policies etc.

### Illustration 1

From the following information extracted from the Balance Sheets of Star Ltd. for four previous financial years, calculate the trend percentages taking 2007-08 as the

base year:

	2007-08	2008-09	2009-2010	2010-11
	(₹ in lakhs)			
<b>Current Assets:</b>				
Cash	200	240	400	220
Bank	260	300	200	240
Debtors	400	600	1,000	1,600
Stock	800	1,200	1,800	2,000
<b>Fixed Assets:</b>				
Building	1,000	1,200	1,200	1,200
Plant and Machinery	2,000	2,400	2,400	2,800
	<u>4,660</u>	<u>5,940</u>	<u>7,000</u>	<u>8,060</u>

**Solution:**

#### Trend Percentages

	2007-08	2008-09	2009-10	2010-11	2007-08	2008-09	2009-10	2010-11
	(₹ in lakhs)				(Trend percentage)			
<b>Current assets:</b>								
Cash	200	240	400	220	100	120.00	200.00	110.00
Bank	260	300	200	240	100	115.38	76.92	92.30
Debtors	400	600	1,000	1,600	100	150.00	250.00	400.00
Stock	800	1,200	1,800	2,000	100	150.00	225.00	250.00
<b>Fixed Assets:</b>								
Building	1,000	1,200	1,200	1,200	100	120.00	120.00	120.00
Plant and Machinery	2,000	2,400	2,400	2,800	100	120.00	120.00	140.00
	<u>4,660</u>	<u>5,940</u>	<u>7,000</u>	<u>8,060</u>	<u>100</u>	<u>127.46</u>	<u>150.21</u>	<u>172.96</u>

**N.B.** Ratio Analysis and Cash Flow Statement are discussed in detail later.

## 11. OBJECTIVES OF FINANCIAL STATEMENT ANALYSIS

Financial statement analysis is very much helpful in assessing the financial position and profitability of a concern. The main objectives of analysing the financial statements are as follows:

- (i) The analysis would enable the present and the future earning capacity and the profitability of the concern.
- (ii) The operational efficiency of the concern as a whole as well as department wise can be assessed. Hence the management can easily locate the areas of efficiency and inefficiency.
- (iii) The solvency of the firm, both short-term and long-term, can be determined with the help of financial statement analysis which is beneficial to trade creditors and debentureholders.

- (iv) The comparative study in regard to one firm with another firm or one department with another department is possible by the analysis of financial statements.
- (v) Analysis of past results in respects of earning and financial position of the enterprise is of great help in forecasting the future results. Hence it helps in preparing budgets.
- (vi) It facilitates the assessments of financial stability of the concern.
- (vii) The long-term liquidity position of funds can be assessed by the analysis of financial statements.

## **12. LIMITATIONS OF FINANCIAL STATEMENT ANALYSIS**

(i) Owing to the fact that financial statements are compiled on the basis of historical costs, while there is a market decline in the value of the monetary unit and resultant rise in prices, the figures in the financial statement loses its functions as an index on current economic realities. Again the financial statements contain both items. So an analysis of financial statements can not be taken as an indicator for future forecasting and planning.

(ii) Analysis of financial statements is a tool which can be used profitably by an expert analyst but may lead to faulty conclusions if used by unskilled analyst. So the result can not be taken as judgements or conclusions.

(iii) Financial statements are interim reports and therefore can not be final because the final gain or loss can be computed only at the termination of the business. Financial statement reflects the progress of the position of the business so analysis of these statements will not be a conclusive evidence of the performance of the business.

(iv) Financial statements though expressed in exact monetary terms are not absolutely final and accurate and it depends upon the judgement of the management in respect of various accounting methods. If there is change in accounting methods, the analysis may have no comparable basis and the result will be biased.

(v) The reliability of analysis depends on the accuracy of the figures used in the financial statements. The analysis will be vitiated by manipulations in the income statement or balance sheet and accounting procedure adopted by the accountant for recording.

(vi) The results for indications derived from analysis of financial statements may be differently interpreted by different users.

(vii) The analysis of financial statement relating to a single year only will have limited use. Hence the analysis may be extended over a number of years so that results may be compared to arrive a meaningful conclusion.

(viii) When different firms are adopting different accounting procedures, records, policies and different items under similar headings in the financial statements, the comparison will be more difficult. It will not provide reliable basis to access the performance, efficiency, profitability and financial condition of the firm as compared to industry as a whole.

(ix) There are different tool of analysis available for the analyst. However, which tool is to be used in a particular situation depends on the skill, training, and expertise of the analyst and the result will vary accordingly.

### 13. ACCOUNTING RATIOS

An absolute figure often does not convey much meaning. Generally, it is only in the light of other information that significance of a figure is realised. A weighs 70 kg. Is he fat? One cannot answer this question unless one knows A's age and height. Similarly, a company's profitability cannot be known unless together with the amount of profit and the amount of capital employed. The relationship between the two figures expressed arithmetically is called a ratio. The ratio between 4 and 10 is 0.4 or 40% or 2:5. "0.4", "40%" and "2:5" are ratios. Accounting ratios are relationships, expressed in arithmetical terms, between figures which have a cause and effect relationship or which are connected with each other in some other manner.

Accounting ratios are a very useful tool for grasping the true message of the financial statements and understanding them. Ratios naturally should be worked out between figures that are significantly related to one another. Obviously no purpose will be served by working out ratios between two entirely unrelated figures, such as discount on debentures and sales. Ratios may be worked out on the basis of figures contained in the financial statements.

Ratios provide clues and symptoms of underlying conditions. They act as indicators of financial soundness, strength, position and status of an enterprise.

Interpretation of ratios form the core part of ratio analysis. The computation of ratio is simply a clerical work but the interpretation is a taste requiring art and skill. The usefulness of ratios dependent on the judicious interpretations.

### 14. USES OF RATIOS

A comparative study of the relationship, between various items of financial statements, expressed as ratios, reveals the profitability, liquidity, solvency as well as the overall financial position of the enterprises.

Ratio analysis helps to analyse and understand the financial health and trend of a business, its past performance makes it possible to have forecast about future state of affairs of the business. Interfirm comparison and intrafirm comparison becomes easier through the analysis. Past performance and future projections could be reviewed through the ratio analysis easily. Management uses the ratio analysis in exercising control in various areas viz. budgetary control, inventory control, financial control etc. and fixing the accountability and responsibility of different departmental heads for accelerated and planned performance. It is useful for all the constituents of the company as discussed under:

1. *Management*: Management is interested in ratios because they help in the formulation of policies, decision-making and evaluating the performances and trends of the business and its various segments.
2. *Shareholders*: With the application of ratio analysis to financial statements, shareholders can understand not only the working and operational efficiency of their company, but also the likely effect of such efficiency on the net worth

and consequently the price of their shares in the Stock Exchange. With the help of such analysis, they can form opinion regarding the effectiveness or otherwise of the management functions.

3. *Investors*: Investors are interested in the operational efficiency, earning capacities and „financial health’ of the business. Ratios regarding profitability, debt-equity, fixed assets to net worth, assets turnover, etc., are some measures useful for the investors in making decisions regarding the type of security and industry in which they should invest.
4. *Creditors*: Creditors can reasonably assure themselves about the solvency and liquidity position of the business by using ratio-analysis. Such analysis helps to throw light on the repayment policy and capability of an enterprise.
5. *Government*: The Government is interested in the „financial health’ of the business. Carefully worked ratios will reflect the policy of the management and its consistency or otherwise with the overall regional and national economic policies. Such ratios help in better understanding of cost-structures and may justify price controls by the Government to save the consumers.
6. *Analysts*: Ratio analysis is the most important technique available to the financial analysis to study the financial statements to compare the progress and position of various firms with each other and vis-a-vis the industry.

## 15. CLASSIFICATION OF RATIOS

Different ratios calculated from different financial figures carry different significance for different purposes. For example, for the creditors liquidity and solvency ratios are more significant than the profitability ratios, which are of prime importance for an investor. This means that ratios can be grouped on different basis depending upon their significance. The classification is rather crude and unsuitable to determine the profitability or financial position of the business. In general, accounting ratios may be classified on the following basis leading to overlap in many cases.

### 15.1 According to the statement upon which they are based

Ratios can be classified into three groups according to the statements from which they are calculated:

- (i) *Balance Sheet Ratios*: They deal with relationship between two items appearing in the balance sheet, e.g., current assets to current liability or current ratio. These ratios are also known as financial position ratios since they reflect the financial position of the business.
- (ii) *Operating Ratios or Profit and Loss Ratios*: These ratios express the relationship between two individual or group of items appearing in the income or profit and loss statement. Since they reflect the operating conditions of a business, they are also known as operating ratios, e.g., gross profit to sales, cost of goods sold to sales, etc.
- (iii) *Combined Ratios*: These ratios express the relationship between two items, each appearing in different statements, i.e., one appearing in balance sheet

while the other in income statement, e.g., return on investment (net profit to capital employed); Assets turnover (sales) ratio, etc. Since both the statements are involved in the calculation of each of these ratios, they are also known as inter-statement ratios.

Since the balance sheet figures refer to one point of time, while the income statement figures refer to events over a period of time, care must be taken while calculating combined or inter-statement ratios. For example while computing assets turnover ratio, average assets should be taken on the basis of opening and ending balance sheets.

### 15.2 Classification according to “importance”

This classification has been recommended by the British Institute of Management for inter-firm comparisons. It is based on the fact that some ratios are more relevant and important than others in the process of comparisons and decision-making. Therefore, ratios may be treated as primary or secondary.

- (a) *Primary Ratio*: Since profit is primary consideration in all business activities, the ratio of profit to capital employed is termed as ‘Primary Ratio’. In business world this ratio is known as “Return on Investment”. It is the ratio which reflects the validity or otherwise of the existence and continuation of the business unit. In case if this ratio is not satisfactory over long period, the business unit cannot justify its existence and hence, should be closed down. Because of its importance for the very existence of the business unit it is called ‘Primary Ratio’.
- (b) *Secondary Ratios*: These are ratios which help to analyse the factors affecting “Primary Ratio”. These may be sub-classified as under:
  - (i) *Supporting Ratios*: These are ratios which reflect the profit-earning capacities of the business and thus support the “Primary Ratio”. For example sales to operating profit ratio reflects the capacity of contribution of sales to the profits of the business. Similarly, sales to assets employed reflects the effectiveness in the use of assets for making sales, and consequently profits.
  - (ii) *Explanatory Ratios*: These are ratios which analyse and explain the factors responsible for the size of profit earned. Gross profit to sales, cost of goods sold to sales, stock-turnover, debtors turnover are some of the ratios which can explain the size of the profits earned. Where these ratios are calculated to highlight the effect of specific activity, they are termed as ‘Specific Explanatory Ratios’. For example, the effect of credit and collection policy is reflected by debtors turnover ratio.

### 15.3 Functional classification

The classification of ratios according to the purpose of its computation is known as functional classification. On this basis ratios are categorised as follows:

- (i) *Profitability Ratios*: Profitability ratios gives some yardstick to measure the profit in relative terms with reference to sales, assets or capital employed. These ratios highlight the end result of business activities. The main objective is to judge the efficiency of the business.

- (ii) *Turnover Ratios or Activity Ratios:* These ratios are used to measure the effectiveness of the use of capital/assets in the business. These ratios are usually calculated on the basis of sales or cost of goods sold and are expressed in integers rather than as percentages.
- (iii) *Financial Ratios or Solvency Ratios:* These ratios are calculated to judge the financial position of the organisation from short-term as well as long-term solvency point of view. Thus, it can be sub-divided into: (a) Short-term Solvency Ratios (Liquidity Ratios) and (b) Long-term Solvency Ratios (Capital Structure Ratios).
- (iv) *Market Test Ratios:* These are of course, some profitability ratios, having a bearing on the market value of the shares.

The classification of the structure of ratio analysis cuts across the various bases on which it has been made. The determination of activity and profitability ratios are drawn partly from the balance sheet and partly from the profit and loss account. Ratios satisfying the test of liquidity or solvency partake the items of both the balance sheet and income statement, some activity ratios coincide with those satisfying the test of liquidity, some leverage ratios belong to the category of income statement. This clearly indicates that one basis of classification crosses into other category. However, for the purpose of consideration of individual ratios, a classification of ratio on functional basis is discussed hereunder:

### 15.3.1 Profitability Ratios

A measure of 'profitability' is the overall measure of efficiency. In general terms efficiency of business is measured by the input-output analysis. By measuring the output as a proportion of the input, and comparing result of similar other firms or periods the relative change in its profitability can be established.

The income (output) as compared to the capital employed (input) indicates profitability of a firm. Thus the chief profitability ratio is:

$$\frac{\text{Operating Profit (net margin)}}{\text{Operating Capital Employed}} \times 100$$

Once this is known, the analyst compares the same with the profitability ratio of other firms or periods. Then, when he finds some contrast, he would like to have details of the reasons. These questions are sought to be answered by working out relevant ratios. The main profitability ratio and all the other sub-ratios are collectively known as 'profitability ratios'.

Profitability ratio can be determined on the basis of either investments or sales. Profitability in relation to investments is measured by return on capital employed, return on shareholders' funds and return on assets. The profitability in relation to sales are profit margin (gross and net) and expenses ratio or operating ratio.

#### (i) Return on Investment

This ratio is also known as overall profitability ratio or return on capital employed. The income (output) as compared to the capital employed (input) indicates the return on investment. It shows how much the company is earning on its investment. This

ratio is calculated as follows:

$$\text{Return on Investment} = \frac{\text{Net Operating Profit} \times 100}{\text{Capital Employed}}$$

Operating profit means profit before interest and tax. In arriving at the profit, interest on loans is treated as part of profit (but not the interest on bank overdraft or other short-term finance) because loans themselves are part of the input, i.e., the capital employed and hence, the interest on loans should also be part of the output. All non-business income or rather income not related to normal operations of the company should be excluded. Thus net operating profit figure shall be IBIT, i.e., Income Before Interest and Taxation (excluding non-business income).

The income figure is reckoned before taxation because the amount of tax has no relevance to the operational efficiency. Both interest and taxation are appropriations of profit and do not reflect operational efficiency. Moreover, to compare the profitability of two different organisations having different sources of finance and different tax burden, the profit before interest and taxation is the best measure.

Capital employed comprises share capital and reserves and surplus, long-term loans minus non-operating assets and fictitious assets. It can also be represented as net fixed assets plus working capital (i.e. current assets minus current liabilities).

Capital employed = Share Capital + Reserve and Surplus + Long-term Loans –  
Non-Operating Assets – Fictitious Assets

OR

Capital employed = Net fixed assets + working capital

In using overall profitability ratio as the chief measure of profitability, the following two notes of caution should be kept in mind. First, the figure of operating profit shows the profit earned throughout a period. The figure of capital employed on the other hand refers to the values of assets as on a balance sheet date. As the values of assets go on changing throughout a business period it may be advisable to take the average assets throughout a period, so that the profits are compared against average capital employed during a period.

Secondly, in making comparison between two different units on the basis of the overall profitability ratio, the time of incorporation of the two units should be taken care off. If a company incorporated in 2000 is compared with that incorporated in 2010, the first company's assets will be appearing at a much lower figure than those of second company. Thus the former will show a lower capital base and if profits of both the companies are the same, the former will show a higher rate of return. This does not indicate higher efficiency; only the capital employed is lower because of the reason that it started 10 years earlier. Hence, in such cases the present value of the fixed assets should be considered for calculating the capital employed.

“Return on capital employed” should be used cautiously with clear understanding of its limitations. The ‘profits’ and “capital employed” figures are the result of a number of approximations (example, depreciation) and human judgement (valuation of assets). Therefore, the purpose of calculation of the ratio should be kept in view and appropriate figures should be selected having regard to impact of changing price levels.

Suppose a company has the following items on the liabilities side and it shows underwriting commission of ₹1,00,000 on the assets side:

	₹
13% Preference capital	10,00,000
Equity capital	30,00,000
Reserves	26,00,000
Loans @ 15%	30,00,000
Current Liabilities	15,00,000

Its profit, after paying tax @ 50% is ₹14,00,000. Profit before interest and tax will be ₹32,50,000 which can be calculated as shown below:

	₹
Profit after tax	14,00,000
Tax	14,00,000
Interest @ 15% on ₹30,00,000	4,50,000
	32,50,000

The operating capital employed is ₹95,00,000 i.e. total of all the items on liabilities side (excluding current liabilities) less ₹1,00,000, a fictitious asset (underwriting commission).

The ROI comes to

$$\frac{₹ 32,50,000}{₹ 95,00,000} \times 100 \text{ or } 34.21\%$$

The overall profitability ratio has two components. These are the net profit ratio (operating profit/sales x 100) multiplied by turnover ratio (sales/capital employed). Therefore, ROI, in terms of percentage:

$$\frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100 = 100 \times \frac{\text{Operating Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Employed}}$$

If a management wants to maximize its profitability, it could do so by improving its net profit ratio and turnover ratio. The former refers to the margin made in each sale in terms of percentage whereas, the latter shows the utilization, i.e., rotation of the capital in making the sale. If the selling price of an article is ₹10 whose cost is ₹6, there is a margin of ₹4 or 40%. This shows the gap between selling price and cost price in the percentage form. The overall profitability is also dependent upon the effectiveness of employment of capital. If in this case, sales ₹200 were made with a capital of ₹100 then the rotation, i.e. the turnover is 200/100 or 2 times. Thus the business has earned a total profit of ₹80 with a capital of ₹100, profitability ratio being 80%, i.e., Net profit ratio x Turnover ratio = 40% x 2 = 80%.

**Illustration 2**

Determine which company is more profitable:

	<i>A Ltd.</i>	<i>B Ltd.</i>
Net Profit Ratio	3%	4%
Sales/Capital Employed	5 times	3 times

**Solution:**

Judging from the net margin ratio B Ltd. appears to be more profitable. But the criteria for determining profitability is return on capital employed which in this case works out to 15% and 12% respectively for A Ltd. and B Ltd. Hence A Ltd. is undoubtedly more profitable.

Return on investment is a good measure of profitability in as much as it is an extension of the input-output analysis. Moreover, it aids in comparing the performance efficiency of dissimilar enterprises.

*(ii) Return on Shareholders' Funds*

It is also referred to as return on net worth. In this case it is desired to work out the profitability of the company from the shareholders' point of view and it is computed as follows:

$$\frac{\text{Net Profit after Interest and Tax} \times 100}{\text{Shareholders' Funds}}$$

Modifications of the 'return on capital employed' can be made to adopt it to various circumstances. Thus if it is required to work out the profitability from the shareholders' point of view, then the profit figure should be after interest and taxation and the capital employed should be after deducting the long-term loans. This ratio would reflect the profitability for the shareholders. To extend the idea further, the profitability from equity shareholders' point of view can also be worked out by taking the profits after preference dividend and comparing against capital employed after deducting both long-term loans and preference capital.

*(iii) Return on Assets*

Here the profitability is measured in terms of the relationship between net profits and assets. It shows whether the assets are being properly utilised or not. It is calculated as:

$$\frac{\text{Net Profit after Tax} \times 100}{\text{Total Assets}}$$

This ratio is a measure of the profitability of the total funds or investment of the organisation.

*(iv) Profit Ratios**(a) Gross Profit Ratio or Gross Margin*

Gross profit ratio expresses the relationship of gross profit to net sales or turnover.

Gross profit is the excess of the proceeds of goods sold and services rendered during a period over their cost, before taking into account administration, selling and distribution and financing charges. Gross profit ratio is expressed as follows:

$$\frac{\text{Gross Profit} \times 100}{\text{Net Sales}}$$

This ratio is important to determine general profitability since it is expected that the ratio would be quite high so as to cover not only the remaining costs but also to allow proper returns to owners.

Any fluctuation in the gross profit ratio is the result of a change either in 'sales' or the 'cost of goods sold' or both. The rise or fall in the selling price may be an external factor over which the management may have little control, specially when prices are controlled. The management, however, must try to keep the other end of the margin (i.e., cost) at least steady, if not reduce it. If the gross profit ratio is lower than what it was previously, when the selling price has remained steady, it can be reasonably concluded that there is an increase in the manufacturing cost. Since manufacturing overheads include a fixed element as well, a fall in the volume of sales will also lower the rate of gross profit and *vice-versa*.

#### (b) Net Profit Ratio

One of the components of return on capital employed is the net profit ratio (or the margin on sales) calculated as:

$$\text{Net Profit Ratio} = \frac{\text{Operating Profit}}{\text{Sales}} \times 100$$

It indicates the net margin earned in a sale of ₹ 100. Net profit is arrived at from gross profit after deducting administration, selling and distribution expenses; non-operating incomes, such as dividends received and non-operating expenses are ignored, since they do not affect efficiency of operations.

If the expenses met out of the gross profit are disproportionately heavy, the net profit ratio will go down. If gross profit ratio is 40%, but the net profit ratio is 15% it means the expenses ratio is 25%. Thus a complement of the net profit ratio is  $\frac{\text{Administration expenses} + \text{Selling expenses}}{\text{Sales}} \times 100$ . Proceedings upwards from net profit, we can arrive at gross profit if administrative and selling expenses are added back. Similarly, if we add administrative and selling expenses ratio to the net profit ratio we can get the gross profit ratio.

#### (c) Operating Ratio

The ratio of all operating expenses (i.e., materials used, labour, factory overheads, office and selling expenses) to sales is the operating ratio.

A comparison of the operating ratio would indicate whether the cost content is high or low in the figure of sales. If the annual comparison shows that the sales has increased, the management would be naturally interested and concerned to know as to which element of the cost has gone up.

It is not necessary that the management should be concerned only when the operating ratio goes up. If the operating ratio has fallen, though the unit selling price has remained the same, still the position needs analysis as it may be the sum total of efficiency in certain departments and inefficiency in others. A dynamic management should be interested in making a fuller analysis.

It is, therefore, necessary to break up the operating ratio into various cost ratios. The major components of cost are: material, labour and overheads. Therefore, it is worthwhile to classify the cost ratio as:

$$\begin{aligned} \text{Material cost ratio} &= \frac{\text{Material consumed}}{\text{Sales}} \times 100 \\ \text{Labour cost ratio} &= \frac{\text{Labour cost}}{\text{Sales}} \times 100 \\ \text{Factory overheads cost ratio} &= \frac{\text{Overheads cost}}{\text{Sales}} \times 100 \\ \text{Administrative expenses ratio} &= \frac{\text{Administrative expenses}}{\text{Sales}} \times 100 \\ \text{Selling and distribution expenses ratio} &= \frac{\text{Selling and distribution expenses}}{\text{Sales}} \times 100 \end{aligned}$$

Generally all these ratios are expressed in terms of percentage. They total upto the Operating Ratio. This, deducted from 100 will be equal to the Net Profit Ratio.

If possible, the total expenditure for effecting sales should be divided into two categories, viz., fixed and variable-and then ratios should be worked out. The ratio of variable expenses to sales will be generally constant; that of fixed expenses should fall if sales increase; it will increase if sales fall.

### 15.3.2 Activity Ratios or Turnover Ratios

The ratios used to measure the effectiveness of the employment of resources are termed as activity ratios. Since these ratios relate to the use of assets for generation of income through turnover they are also known as turnover ratios, as we have seen already, the overall profitability of the business depends on two factors i.e. (i) the rate of return on sales and (ii) the rate of return on capital employed i.e. the speed at which the capital employed in the business relates. More efficient the operations of an undertaking, the quicker and more number of times the rotation is. Thus the overall profitability ratio is calculated as - Net Profit Ratio x Turnover Ratio. The net profit ratio has already been discussed. Now the important turnover ratios as regards capital employed and assets are discussed below:

#### (i) *Capital Turnover (Sales to Capital Employed) Ratio*

This ratio shows the efficiency of capital employed in the business and is calculated as follows:

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital Employed}}$$

The higher the ratio the greater are the profits.

(ii) *Total Assets Turnover Ratio*

This ratio is ascertained by dividing the net sales by the value of total assets. Thus,

$$\text{Total Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Total Assets}}$$

A high ratio is an indicator of overtrading of total assets while a low ratio reveals idle capacity. The total Assets Turnover Ratio can be segregated into:

(a) *Fixed Assets Turnover Ratio*

This ratio indicates the number of times fixed assets are being turned over in a stated period. It is calculated as:

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

This ratio is an indicator of the extent to which investment in fixed assets contributes to generate sales. The fixed assets are to be taken net of depreciation. The higher is the ratio the better is the performance.

(b) *Working Capital Turnover Ratio*

This ratio shows the number of times working capital is turned-over in a stated period. This ratio is calculated as:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Working Capital}}$$

It indicates to what extent the working capital funds have been employed in the business towards sales.

(iii) *Stock Turnover Ratio (Inventory Turnover Ratio)*

This ratio is an indicator of the efficiency of the use of investment in stock. It is calculated as:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} \text{ or } \frac{\text{Sales}}{\text{Average Inventory}}$$

Too large an inventory will depress the ratio; control over inventories and active sales promotion will increase the ratio. If desired this ratio may be split into two ratios, for raw materials and for finished goods:

(i)  $\frac{\text{Material consumed}}{\text{Average raw material stocks}}$ ; and

$$(ii) \frac{\text{Sale or Cost of goods sold}}{\text{Average stocks of finished goods}}$$

This analysis will throw a better light on the inventory position.

Average inventory is calculated on the basis of the average inventory at the beginning and at the end of the accounting period.

(iv) *Debtors Turnover Ratio (Debtors' Velocity)*

These days some amount of sales always locked up in the form of book debts. Efficient credit control and prompt collection of amounts due will mean lower investments in book debts. This ratio measures the net credit sales of a firm to the recorded trade debtors thereby indicating the rate at which cash is generated by turnover of receivable or debtors. This ratio is calculated as:

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Debtors}}$$

Average debtors refer to the average of opening and closing balance of debtors for the period. Debtors include bills receivables but exclude debts which arise on account of transactions other than sale of goods. While calculating debtors turnover, it is important to note that provision for bad and doubtful debts are not deducted from total debtors in order to avoid the impression that a larger amount of receivables have been collected.

*Debt Collection Period:* This ratio indicates the extent to which the debts have been collected in time. This ratio is infact, interrelated with and dependent upon the debtors turnover ratio. It is calculated by dividing the days in a year by the debtors turnover. This ratio can be computed as follows:

$$(i) \frac{\text{Months / Days in a Year}}{\text{Debtors Turnover}}$$

OR

$$\frac{\text{Average Debtors} \times \text{Months / Days in a Year}}{\text{Net Credit Sales for the Year}}$$

OR

$$\frac{\text{Average Debtors}}{\text{Average Monthly / Daily Credit Sales}}$$

Debtors' collection period shows the quality of debtors since it measures the speed with which money is collected from them. It is rather difficult to specify a standard collection period for debtors. It depends upon the nature of the industry, seasonal character of the business and credit policy of the firm etc.

### Illustration 3

From the following information, calculate, debtors turnover ratio and average collection period.

	₹
Total debtors (opening balance)	2,00,000
Cash sales	1,50,000
Credit sales	10,00,000
Cash collected	7,80,000
Sales returns	60,000
Bad debts	40,000
Discount allowed	20,000
Provision for bad debts	25,000
No. of days in a year - 360	

**Solution:**

Total Debtors Account			
Dr.			Cr.
	₹		₹
To Balance b/d	2,00,000	By Cash	7,80,000
To Credit sales	10,00,000	By Sales returns	60,000
		By Bad debts	40,000
		By Discount allowed	20,000
		By Balance c/d	<u>3,00,000</u>
	<u>12,00,000</u>		<u>12,00,000</u>

$$\text{Debtors Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Average Debtors}}$$

$$\text{Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

$$= \frac{\text{₹ } 2,00,000 + \text{₹ } 3,00,000}{2}$$

$$= \text{₹ } 2,50,000$$

$$\text{Debtors Turnover Ratio} = \frac{\text{₹ } 10,00,000}{\text{₹ } 2,50,000} = 4 \text{ times}$$

$$\text{Average Collection Period} = \frac{\text{Days in the Year}}{\text{Debtors Turnover Ratio}}$$

$$= \frac{360}{4} = 90 \text{ days.}$$

**(v) Creditors Turnover Ratio (Creditors' Velocity)**

Like debtors' turnover ratio, this ratio indicates the speed at which the payments for credit purchases are made to creditors. This ratio is computed as follows:

$$\text{Creditors Turnover Ratio} = \frac{\text{Credit Purchases}}{\text{Average Creditors}}$$

The term „creditors’ include, trade creditors and bills payable. In case the details regarding credit purchases, opening and closing balances of creditors are not available, then instead of credit purchases, total purchases may be taken and in place of average creditors, the balance available may be substituted.

*Debt Payment Period:* This ratio gives the average credit period enjoyed from the creditors. It can be computed as under:

$$(i) \frac{\text{Months / Days in a Year}}{\text{Creditors Turnover}}$$

OR

$$(ii) \frac{\text{Average Creditors} \times \text{Months / Days in a Year}}{\text{Credit Purchases in the Year}}$$

OR

$$(iii) \frac{\text{Average Creditors}}{\text{Average Monthly / Daily Credit Purchases}}$$

Both above ratios determine the average age of payables, on the basis of which it can be compensated as to how prompt or otherwise the company is making payments for credit purchases effected by it. A high creditors’ turnover ratio or a low debt payment period shows that creditors are being paid promptly, hence enhancing the credit worthiness of the company. However, a very favourable ratio to this effect also shows that the business is not taking full advantage of credit facilities allowed by the creditors.

### 15.3.3 Financial Ratios

Financial statements of a firm are analysed for ascertaining its profitability as well as financial position. A firm is said to be financially sound provided if it is capable of meeting its commitments both short-term and long-term. Accordingly, the ratios to be computed for judging the financial position are also known as solvency ratios and those ratios which are computed for short-term solvency are known as liquidity ratios.

#### (i) Liquidity Ratio

In a short period, a firm should be able to meet all its short-term obligations i.e. current liabilities and provisions. It is current assets that yield funds in the short period - current assets are those assets which the firm can convert into cash within one year or in short run. Current assets should not only yield sufficient funds to meet current liabilities as they fall due but also enable the firm to carry on its day to day activities. The ratios to test the short-term solvency or liquidity position of an enterprise are mainly the following:

(a) *Current Ratio:* Current ratio also known as the working capital ratio, is the most widely used ratio. It is the ratio of total current assets to current liabilities and is calculated by dividing the current assets by current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets are those assets which can be converted into cash in the short-run or within one year. Likewise, current liabilities are those which are to be paid off in the short run. Current assets normally include cash in hand or at bank, inventories, sundry debtors, loans and advances, marketable securities, pre-paid expenses, etc. while current liabilities consist of sundry creditors, bills payable, outstanding and accrued expenses, provisions for taxation, proposed and un-claimed dividend, bank overdraft etc.

Current ratio indicates the firms' commitment to meet its short-term obligations. It is a measure of testing short-term solvency or in other words, it is an index of the short-term financial stability of an enterprise because it shows the margin available after paying off current liabilities.

Generally 2:1 ratio is considered ideal for a concern. If the current assets are two times of the current liabilities, there will be no adverse effect on the business operations when the payment of liabilities is made. In fact a ratio much higher than 2:1 may be unsatisfactory from the angle of profitability, though satisfactory from the point of view of short-term solvency. A high current ratio may be taken as adverse on account of the following reasons:

- (i) The stock might be piling up because of poor sales.
- (ii) The amount might be looked up in debtors due to slack collection policy.
- (iii) The cash or bank balances might be lying idle because of no proper investment.

(b) *Liquid Ratio*: This ratio is also known as Quick Ratio or Acid Test Ratio. This ratio is calculated by relating liquid or quick assets to current liabilities. Liquid assets mean those assets which are immediately converted into cash without much loss. All current assets except inventories and prepaid expenses are categorised as liquid assets. The ratio can be computed as:

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquidity ratio may also be computed by substituting liquid liabilities in place of current liabilities. Liquid liabilities mean those liabilities which are payable within a short period. Bank overdraft and cash credit facilities, if they become a permanent mode of financing are to be excluded from current liabilities to arrive at liquid liabilities. Thus:

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

This ratio is an indicator of the liquid position of an enterprise. Generally, a liquid ratio of 1:1 is considered as ideal as the firm can easily meet all current liabilities. The main difference in current ratio and liquid ratio is on account of inventories and therefore a comparison of two ratios leads to important conclusions regarding inventory holding up.

*(ii) Long-term Solvency Ratios*

Long-term sources and uses of funds form the basic input for computation of long-term solvency ratios. The investors i.e. shareholders and debenture holders both present and prospective are interested in knowing the financial status of the company so that they can take decisions for long-term investment of their funds. The following are the main ratios in this category.

*(a) Debt-Equity Ratio*

Debt-equity ratio is the relation between borrowed funds and owners' capital in a firm, it is also known as external-internal equity ratio. The debt-equity ratio is used to ascertain the soundness of long-term financial policies of the business. Debt means long-term loans i.e. debentures or long-term loans from financial institutions. Equity means shareholders' funds i.e., preference share capital, equity share capital, reserves less loss and fictitious assets like preliminary expenses. It is calculated in the following ways:

$$(i) \frac{\text{Debts}}{\text{Equity (Shareholders' Funds)}} \quad \text{OR}$$

$$(ii) \frac{\text{Debts}}{\text{Long-term Funds (Shareholders' Funds + Debts)}}$$

The main purpose of this ratio is to determine the relative stakes of outsiders and shareholders.

Normally in India an ideal debt equity ratio is considered to be 2:1 if it is calculated as (i) above or 0.67:1 if calculated as (ii) above. This means that a company may borrow upto twice the amount of its capital and reserves or it may raise two-thirds of its long-term funds by way of loans. Generally loans are very profitable for shareholders since interest at a fixed rate only is payable whereas the yield generally is much higher and income-tax authorities allow interest as a deductible expenses, thus effectively reducing the interest burden of the company. A higher proportion would be risky because loans carry with them for obligation to pay interest at a fixed rate which may become difficult if profit is reduced. However a lower proportion of long-term loans would indicate an undue conservation and unwillingness to take every normal risk. Both these affect the image of the company and the value placed by the market on shares.

*(b) Proprietary Ratio*

This ratio is a variant of debt-equity ratio which establishes the relationship between shareholders funds and total assets. Shareholders' fund means, share capital both equity and preference and reserves and surplus less losses. This ratio is worked out as follows:

$$\text{Proprietary Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Assets}}$$

This ratio indicates the extent to which shareholders' funds have been invested in the assets.

*(c) Fixed Assets Ratio*

The ratio of fixed assets to long-term funds is known as fixed assets ratio. It focusses on the proportion of long-term funds invested in fixed assets. The ratio is expressed as follows:

$$\text{Fixed Assets Ratio} = \frac{\text{Fixed Assets}}{\text{Long - term Funds}}$$

Fixed assets refer to net fixed assets (i.e. original cost-depreciation to date) and trade investments including shares in subsidiaries. Long-term funds include share capital, reserves and long-term loans.

This ratio should not be more than 1. It is the principle of financial management that not merely fixed assets but a part of working capital also should be financed by long-term funds. As such it is desirable to have the ratio at less than one i.e. say, 0.67 to indicate the fact that the entire fixed capital plus a portion of the working capital are financed by long-term funds.

*(d) Debt-Service Ratio*

This ratio is also known as Fixed Charges Cover or Interest Cover. This ratio measures the debt servicing capacity of a firm in so far as fixed interest on long-term loan is concerned. It is determined by dividing the net profit before interest and taxes by the fixed charges on loans. Thus:

$$\text{Debt Service Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest Charges}}$$

This ratio is expressed as „number of times’ to indicate that profit is number of times the interest charges. It is also a measure of profitability. Since higher the ratio, higher the profitability. The ideal ratio should be 6 to 7 times.

*(e) Capital Gearing Ratio*

The proportion between fixed interest or dividend bearing funds and non-fixed interest or dividend bearing funds in the total capital employed in the business is termed as capital gearing ratio. Debentures, long-term loans and preference share capital belong to the category of fixed interest/dividend bearing funds. Equity share capital, reserves and surplus constitute non-fixed interest or dividend bearing funds. This ratio is calculated as follows:

$$\text{Capital Gearing Ratio} = \frac{\text{Fixed Interest Bearing Funds}}{\text{Equity Shareholders' Funds}}$$

In case the fixed income bearing funds are more than the equity shareholders’ funds, the company is said to be highly geared. A low capital gearing implies that equity funds are more than the amount of fixed interest bearing securities. This ratio indicates the extra residual benefits accruing to equity shareholders. Whether the concern is operating on trading on equity can be judged by this ratio.

### 15.3.4 Market Test Ratios

These ratios are calculated generally in case of such companies whose shares and stocks are traded in the stock exchanges. Shareholders, present and probable, are interested not only in the profits of the company but also in the appreciation of the value of their shares in the stock market. The value of shares in the stock market, besides other factors, also depends upon factors like dividends declared, earning per share, the payout policy, etc., of the companies. The following ratios reflect the effect of these factors on the market value of the shares.

(i) *Earning Per Share (EPS)*: This is calculated as under:

$$\text{EPS} = \frac{\text{Net profit}}{\text{No. of equity shares}}$$

This ratio measures the profit available to the equity shareholders on a per share basis. Suppose, the net income of company after preference dividend is ₹40,000 and the number of equity shares is 6,000 then,

$$\text{EPS} = \frac{\text{₹ 40,000}}{6,000} = \text{₹ 6.66 per share.}$$

It should be noted that net income here is the net income in income statement for the period, after taking into consideration operating, non-operating, and other items like income-tax. It should be remembered that if any dividend is payable to the preference shareholders, it has to be deducted before arriving at net income for this purpose. This ratio is of considerable importance in estimating the market price of the shares. A low E.P.S. means lower possible dividends and so lower market value, while a high EPS has a favourable effect on the market value of the shares.

However, the EPS alone does not reflect the effect of various financial operations of the business. Also, its calculation may be affected, to a considerable extent, by different accounting practices and policies relating to valuation of stocks, depreciation, etc. Therefore, this ratio should be cautiously interpreted.

(ii) *Price Earning Ratio*: This ratio establishes relationship between the market price of the shares of a company and its earning per share (EPS). It is calculated as under:

$$\text{Price Earning Ratio (PER)} = \frac{\text{Market value per equity share}}{\text{Earning per share}}$$

Assuming the market value of a share to be ₹40 and the EPS ₹6.66 per share as calculated in (i) above, then the PER comes to  $\frac{\text{₹40}}{6.66}$  or 6 times. This ratio helps

in predicting the future market value of the shares within reasonable limits. It also helps in ascertaining the extent of under and over-valuation in the market price, thus pointing to the effect of factors generated by the company's financial position. This can be illustrated by the following illustration:

Suppose, the actual market value per share is ₹45 while on the basis of PER and EPS it should be 6 times of EPS, i.e., ₹6.66 x 6 = ₹40. The excess of ₹5 between anticipated and actual market price reflects the effect of general economic and political conditions, the image of the company, etc.... which cannot be made out from company's financial statements. A reciprocal of this ratio gives the capitalisation rate of current earnings per share.

(iii) *Pay-out Ratio*: This ratio expresses the relationship between what is available as earnings per share and what is actually paid in the form of dividends out of available earnings. It is a good measure of the dividend policy of the company. A higher payout ratio may mean lower retention and ploughing back of profits, a deteriorating liquidity position and little or no increase in the profit-earning capacity of the company. This ratio is calculated with the help of the following formula:

$$\text{Pay-out Ratio} = \frac{\text{Dividend per equity share}}{\text{Earnings per share}}$$

(iv) *Dividend Yield Ratio*: This ratio establishes the relationship between the market price and the dividend paid per share. It is expressed as a percentage and gives the rate of return on the market value of the shares and helps in the decision of investors who are more concerned about returns on their investment rather than its capital appreciation. This ratio is calculated as under:

$$\frac{\text{Dividend per share}}{\text{Market price per share}} \times 100$$

Since dividends are declared on paid-up value of shares, they do not reflect the actual rate of earning if the shares are purchased at market price, which is generally different from paid-up value. This ratio removes this ambiguity by relating the dividends to the market value of shares. For example, if a company declares 20% dividend on its share of ₹20 each, having a market value of ₹40 each, then the real rate of return is not 20% but is 10% as calculated below:

$$\begin{aligned} & \frac{\text{Dividend per share}}{\text{Market value per share}} \times 100 \\ &= \frac{4}{40} \times 100 = 10\% \end{aligned}$$

It should be noted that in the calculation of all the above four ratios (market test) preference shares are ignored and their dividend is adjusted against income, before it is considered for these ratios.

## 16. ADVANTAGES OF RATIO ANALYSIS

Ratio analysis is a powerful tool of financial analysis. An absolute figure generally conveys no meaning. It is seen that mostly figure assumes importance only in background of other information. Ratios bring together figures which are significantly allied to one another to portray the cause and effect relationship.

From a study of the various ratios and their practical applications, the following advantages can be attributed to the technique of ratio analysis:

1. It helps to analyse and understand financial health and trend of a business, its past performance, and makes it possible to forecast the future state of affairs of the business. They diagnose the financial health by evaluating liquidity, solvency, profitability etc. This helps the management to assess the financial requirements and the capabilities of various business units. It serves as a media to link the past with the present and the future.
2. It serves as a useful tool in management control process, by making a comparison between the performance of the business and the performance of similar types of business.
3. Ratio analysis play a significant role in cost accounting, financial accounting, budgetary control and auditing.
4. It helps in the identification, tracing and fixing of the responsibilities of managerial personnel at different levels.
5. It accelerates the institutionalisation and specialisation of financial management.
6. Accounting ratios summarise and systematise the accounting figures in order to make them more understandable in a lucid form. They highlight the inter-relationship which exists between various segments of the business expressed by accounting statements.

## **17. LIMITATIONS OF RATIO ANALYSIS**

Ratio analysis is a widely used technique to evaluate the financial position and performance of a business. But these are subject to certain limitations:

- (i) Usefulness of ratios depend on the abilities and intentions of the persons who handle them. It will be affected considerably by the bias of such persons.
- (ii) Ratios are worked out on the basis of money-values only. They do not take into account the real values of various items involved. Thus, the technique is not realistic in its approach.
- (iii) Historical values (specially in balance sheet ratios) are considered in working out the various ratios. Effects of changes in the price levels of various items are ignored and to that extent the comparisons and evaluations of performance through ratios become unrealistic and unreliable.
- (iv) One particular ratio, in isolation is not sufficient to review the whole business. A group of ratios are to be considered simultaneously to arrive at any meaningful and worthwhile opinion about the affairs of the business.
- (v) Since management and financial policies and practices differ from concern to concern, similar ratios may not reflect similar state of affairs of different concerns. Thus, comparisons of performance on the basis of ratios may be confusing.

- (vi) Ratio analysis is only a technique for making judgements and not a substitute for judgement.
- (vii) Since ratios are calculated on the basis of financial statements which are themselves affected greatly by the firm's accounting policies and changes therein, the ratios may not be able to bring out the real situations.
- (viii) Ratios are at best, only symptoms; they may indicate what is to be investigated - only a careful investigation will bring out the correct position.
- (ix) Ratios are only as accurate as the accounts on the basis of which these are established. Therefore, unless the accounts are prepared accurately by applying correct values to assets and liabilities, the statements prepared therefrom would not be correct and the relationship established on that basis would not be reliable.

#### Illustration 4

From the following statements, calculate the various ratios:

#### Condensed Income Statement of Juliet & Company for year ending March 31, 2011

	₹	% sales
Net Sales	600	100.0
Less: Cost of goods sold	<u>360</u>	<u>60.0</u>
Gross Profit	240	40.0
Operating expenses	<u>156</u>	<u>26.0</u>
Operating Profit	84	14.0
Interest	<u>8</u>	<u>1.3</u>
Income before tax	76	12.7
Income tax provision	<u>38</u>	<u>6.4</u>
Net Income after tax for the year	<u>38</u>	<u>6.3</u>

(in ₹ '000)

#### Balance Sheet of Juliet & Co. (as on March 31, 2010 and 2011)

	March 31, 2010	March 31, 2011
<i>Assets:</i>		
<i>Current Assets:</i>		
Cash	60	80
Account receivables (net)	60	60
Inventories	100	120
Pre-paid expenses	<u>20</u>	<u>20</u>
Total Current Assets	<u>240</u>	<u>280</u>
<i>Fixed Assets:</i>		

(in ₹ '000)

Land	60	60
Building and structures	240	240
Less: Accumulated depreciation	<u>120</u>	<u>140</u>
Net Buildings structures	<u>120</u>	<u>100</u>
Total Fixed Assets	<u>180</u>	<u>160</u>
<i>Other Assets:</i>		
Goodwill and patents	<u>—</u>	<u>20</u>
Total Assets	<u>420</u>	<u>460</u>
<i>Liabilities and Equities</i>		
<i>Current Liabilities:</i>		
Accounts payable	50	60
Wages and taxes outstanding	30	20
Income-tax payable	<u>20</u>	<u>40</u>
Total Current Liabilities	100	120
<i>Long-term Liabilities:</i>		
10% Mortgage Debentures	<u>80</u>	<u>80</u>
Total Liabilities	<u>180</u>	<u>200</u>
<i>Shareholders' Equity:</i>		
Share capital (6,000 shares of ₹20 each fully paid)	120	120
Retained earnings	<u>120</u>	<u>140</u>
Total Shareholders' Equity	<u>240</u>	<u>260</u>
Total Liabilities and Equities	<u>420</u>	<u>460</u>

**Solution:***(i) Current Ratio*

$$= \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2009-10 = \frac{\text{₹ } 2,40,000}{\text{₹ } 1,00,000} = 2.4 : 1$$

$$2010-11 = \frac{\text{₹ } 2,80,000}{\text{₹ } 1,20,000} = 2.3 : 1$$

It is clear from the above calculations that liquidity has slightly deteriorated in 2010-11. However, it is still above the ideal current ratio which is suggested as 2:1.

*(ii) Debt-Equity Ratio (Debt/Equity)*

$$2009-10 = \frac{\text{₹ } 80,000}{\text{₹ } 2,40,000} = 0.33$$

$$2010-11 = \frac{\text{₹ } 80,000}{\text{₹ } 2,60,000} = 0.31$$

The position has improved.

(iii) *Acid Test Ratio or Quick Ratio*

$$= \frac{\text{Liquid or Quick Assets}}{\text{Current Liabilities}}$$

$$2009-10 = \frac{\text{₹ } 1,20,000}{\text{₹ } 1,00,000} = 1.2$$

$$2010-11 = \frac{\text{₹ } 1,40,000}{\text{₹ } 1,20,000} = 1.17$$

This means that there has been a slight change in the quick ratio for the two periods. The ideal or standard acid test ratio is often taken to be 1:1 (or 100%) for a safe current financial position.

(iv) *Debtors' Turnover Ratio*

$$= \frac{\text{Net Sales}}{\text{Average Debtors}}$$

$$= \frac{\text{₹ } 6,00,000}{\text{₹ } 60,000} = 10 \text{ times}$$

It means that 10% of sales effected always remain to be realised.

Debt Collection Period:

$$= \frac{\text{Average Debtors} \times \text{Days in a year}}{\text{Net Credit Sales}}$$

$$\frac{\text{₹ } 60,000 \times 365}{\text{₹ } 6,00,000} = 36.5 \text{ days} = 36.5 \text{ days}$$

This shows that the company's debts are collected after an average of 36.5 days.

(v) *Inventory Turnover Ratio*

This ratio is an important indication of the speed with which inventories are converted into sales. In other words, it reflects the degree of liquidity of inventories and their relationship with the turnover. It is calculated as:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory at Cost}}$$

Average inventory is calculated by adding opening and closing inventory figures and dividing the total by 2. Thus, inventory turnover for 2010-11.

$$\frac{\text{₹ } 3,60,000}{\text{₹ } 1,10,000} = 3.27 \text{ times.}$$

*(vi) Sales Ratios*

- (i) Sales to fixed assets or fixed assets turnover ratio:

$$\frac{\text{Net Sales}}{\text{Net Fixed Assets}}$$

$$\frac{\text{₹ } 6,00,000}{\text{₹ } 1,60,000} = 3.75 \text{ times.}$$

- (ii) Sales to net worth:

$$\frac{\text{Sales}}{\text{Capital Net Worth}}$$

$$\frac{\text{₹ } 6,00,000}{\text{₹ } 2,60,000} = 2.3 \text{ times.}$$

- (iii) Sales to working capital or working capital turnover ratio:

$$\frac{\text{Sales}}{\text{Working Capital}}$$

$$\frac{\text{₹ } 6,00,000}{\text{₹ } 1,60,000} = 3.75 \text{ times.}$$

*(vii) Operating Ratio*

$$\text{Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Expenses} \times 100}{\text{Sales}}$$

$$\frac{\text{₹ } 3,60,000 + \text{₹ } 1,56,000}{\text{₹ } 6,00,000} \times 100 = 86\%.$$

*(viii) Profit Ratios*

$$(i) \text{ Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 = \frac{\text{₹ } 2,40,000}{\text{₹ } 6,00,000} \times 100 = 40\%$$

$$(ii) \text{ Net Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100 = \frac{\text{₹ } 84,000}{\text{₹ } 6,00,000} \times 100 = 14\%$$

It should be noted that fixed interest charges are not considered as a charge against net operating profits. Some writers calculate this ratio with net income (including non-operating items). In both cases income-tax is ignored.

**Illustration 5**

You are given the following figures:

Current ratio	2.5
Liquidity ratio	1.5
Net working capital	₹3,00,000
Fixed assets turnover ratio (on cost of sales)	2 times
Average debt collection period	2 months
Stock turnover ratio (cost of sales/closing stock)	6 times
Gross profit ratio	20%
Fixed assets/shareholders net worth	0.80
Reserve and surplus/capital	0.50

Draw up the balance sheet of the company.

**Solution:****Balance Sheet as on.....**

		₹			₹
Share capital	5,00,000		Fixed assets	6,00,000	
Reserves and surplus	2,50,000		Stock	2,00,000	
Long-term borrowings	1,50,000		Debtors	2,50,000	
(balancing figure)			Bank	50,000	
Current liabilities	<u>2,00,000</u>				
	<u>11,00,000</u>				<u>11,00,000</u>

**Workings**

If current liabilities	=	1
Current assets	=	2.5
It means the difference or working capital	=	1.5
Working capital or 1.5	=	₹3,00,000
∴ Current assets	=	₹5,00,000
Current liabilities	=	₹2,00,000
Liquidity ratio	=	1.5
And current liabilities	=	₹2,00,000
Liquid assets (bank and debtors) (2,00,000 x 1.5)	=	₹3,00,000
Stock (5,00,000 - 3,00,000, i.e.		
current assets - liquid assets)	=	₹2,00,000
Cost of sales (as stock turnover ratio is 6)	=	₹12,00,000
Sales as G.P. ratio is 20%,		
$\left(12,00,000 + \frac{20}{80} \times 12,00,000\right)$	=	₹15,00,000

Fixed assets, $\frac{₹ 12,00,000}{2}$ as fixed assets turnover is 6	=	₹6,00,000
Debtors, $\frac{₹ 15,00,000}{6}$ Debt collection		
period being 2 months	=	₹2,50,000
Shareholders' net worth, $\frac{₹ 6,00,000 \times 1}{0.80}$	=	₹7,50,000
Out of shareholders' net worth, reserves and surplus	=	₹2,50,000
Share capital	=	₹5,00,000

**Illustration 6**

From the following information prepare balance sheet:

Current ratio	2.5	Working capital	₹ 60,000
Liquidity ratio	1.5	Reserves and surplus	40,000
Proprietary ratio (fixed assets/ proprietary fund)	0.75	Bank overdraft	10,000

There is no long-term loan or fictitious asset.

**Solution:****Working Notes:**

- (1) Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.5$
- Current Asset = 2.5 (Current liabilities)
- Working Capital = Current assets – Current liabilities
- ₹60,000 = 2.5 (Current liabilities) – Current liabilities
- ₹60,000 = 1.5 (Current liabilities)
- Current liabilities = ₹40,000
- Therefore, Current assets = ₹1,00,000
- (2) Proprietary funds + Current liabilities = Current assets + Fixed assets
- $\frac{\text{Fixed Assets}}{\text{Proprietary Funds}} = 0.75$  (Given)
- Fixed assets = 0.75 (Proprietary funds)
- Substituting in the equation above
- Proprietary funds + ₹40,000 = ₹1,00,000 + 0.75 (Proprietary funds)
- 0.25 Proprietary funds = ₹60,000
- Proprietary funds = ₹2,40,000
- Hence,
- Fixed assets = 0.75 (2,40,000)

Fixed assets = ₹1,80,000

Share capital = Proprietary funds – Reserve and surplus  
= ₹2,40,000 – ₹40,000 = ₹2,00,000

(3) Liquid ratio =  $\frac{\text{Liquid Assets}}{\text{Current Liabilities}} = 1.5$

Liquid assets = ₹60,000 i.e. 1.5 (Current liabilities)

Therefore, stock = ₹1,00,000 – ₹60,000 = ₹40,000  
(i.e. Stock = Current assets – Liquid assets)

**Balance Sheet as at.....**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Capital	2,00,000	Fixed assets	1,80,000
Reserves and surplus	40,000	Stock	40,000
Bank overdraft	10,000	Other current assets	60,000
Other current liabilities	<u>30,000</u>		
	<u>2,80,000</u>		<u>2,80,000</u>

**Note:** \*Alternatively liquid ratio can be interpreted as:

$$\text{Liquid ratio} = \frac{\text{Current assets} - \text{Stocks}}{\text{Current liabilities} - \text{Bank overdraft}}$$

Then the value of stock and other current assets will be changed accordingly.

**Illustration 7**

From the final accounts of Prudent Ltd. given below, calculate the following:

- (i) gross profit ratio;                      (ii) current ratio;  
(iii) liquid ratio; and                      (iv) return on investment ratio.

**Trading and Profit and Loss Account  
for the year ended 31st March, 2011**

₹		₹	
To Material consumed:		By Sales	8,50,000
Opening stock	90,500	By Profit	6,000
Purchases	<u>5,45,250</u>	By Interest on investment	3,000
	6,35,750		
Less: Closing stock	<u>1,40,000</u>		
	4,95,750		
To Carriage inwards	14,250		
To Office expenses	1,50,000		
To Sales expenses	30,000		
To Financial expenses	15,000		

To Loss on sales of fixed assets	4,000	
To Net profit	<u>1,50,000</u>	
	<u>8,59,000</u>	<u>8,59,000</u>

**Balance Sheet as on 31st March, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Share capital: 20,000 equity shares of ₹10 each, fully paid	2,00,000	Fixed assets: Buildings	1,50,000
General reserve	90,000	Plant	<u>80,000</u> 2,30,000
Profit and loss account	60,000	Current assets:	
Bank overdraft	30,000	Stock-in-trade	1,40,000
Sundry creditors		Debtors	70,000
For expenses	20,000	Bills receivable	10,000
For others	<u>80,000</u> 1,00,000	Bank balance	<u>30,000</u> 2,50,000
	<u>4,80,000</u>		<u>4,80,000</u>

**Solution:**

$$(i) \text{ Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$\begin{aligned} \text{Gross Profit} &= \text{Sales} - \text{Material consumed} - \text{Carriage inwards} \\ &= ₹8,50,000 - ₹4,95,750 - ₹14,250 \\ &= ₹3,40,000 \end{aligned}$$

$$\text{Sales} = ₹8,50,000$$

$$\text{Gross Profit Ratio} = \frac{₹ 3,40,000}{₹ 8,50,000} \times 100 = 40\%$$

$$(ii) \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{Current Assets} &= \text{Stock} + \text{Debtors} + \text{Bills Receivable} + \text{Bank Balance} \\ &= ₹(1,40,000 + 70,000 + 10,000 + 30,000) \\ &= ₹2,50,000 \end{aligned}$$

$$\begin{aligned} \text{Current Liabilities} &= \text{Sundry Creditors} + \text{Bank Overdraft} \\ &= ₹(1,00,000 + 30,000) \\ &= ₹1,30,000 \end{aligned}$$

$$\text{Current Ratio} = \frac{₹ 2,50,000}{₹ 1,30,000} = 1.92 : 1$$

$$\begin{aligned}
 \text{(iii) Liquid Ratio} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} \\
 \text{Liquid Assets} &= \text{Debtors} + \text{Bills Receivable} + \text{Bank Balance} \\
 &= ₹(70,000 + 10,000 + 30,000) \\
 &= ₹1,10,000 \\
 \text{Current Liabilities} &= \text{Sundry Creditors} + \text{Bank Overdraft} \\
 &= ₹(1,00,000 + 30,000) \\
 &= ₹1,30,000 \\
 \text{Liquid Ratio} &= \frac{1,10,000}{1,30,000} = 0.84 : 1
 \end{aligned}$$

**N.B.** Bank overdraft is treated as current liability.

(iv) Return on Investment

$$\begin{aligned}
 \text{Ratio} &= \frac{\text{Operating Profit} \times 100}{\text{Capital Employed}} \\
 \text{Operating Profit} &= \text{Net Profit} + \text{Non-operating expense/loss} \\
 &\quad - \text{Non-operating income} \\
 &= \text{Net Profit} + \text{Loss on sale of fixed assets} \\
 &\quad + \text{Financial expenses} - (\text{Profit} + \\
 &\quad \text{Interest on investment}) \\
 &= 150,000 + 4,000 + 15,000 - 9,000 = ₹160,000 \\
 \text{Capital Employed} &= \text{Share Capital} + \text{General Reserve} \\
 &\quad + \text{Profit and Loss Account} \\
 &= (2,00,000 + 90,000 + 60,000) = ₹3,50,000 \\
 &= ₹ \frac{1,60,000}{3,50,000} \times 100 = 45.71\%
 \end{aligned}$$

**Note:** It is assumed that 'profit' ₹6,000 as an item of non-operating income and 'financial expenses' as an item of non-operating expense. Since details are not given, these two items are excluded while calculating operating profit.

### Illustration 8

Syntex Limited's financial statements contain the following information:

	31.3.2010	31.3.2011
Cash	2,00,000	1,60,000
Sundry debtors	3,20,000	4,00,000
Temporary investments	2,00,000	3,20,000
Stock	18,40,000	21,60,000

Prepaid expenses	<u>28,000</u>	<u>12,000</u>
Total current assets	<u>25,88,000</u>	<u>30,52,000</u>
Total assets	<u>56,00,000</u>	<u>64,00,000</u>
Current liabilities	6,40,000	8,00,000
10% debentures	16,00,000	16,00,000
Equity share capital	20,00,000	20,00,000
Retained earnings	<u>4,68,000</u>	<u>8,12,000</u>

**Statement of Profit for the year ended 31st March, 2011**

	₹
Sales	40,00,000
Less: Cost of goods sold	– 28,00,000
Less: Interest	– <u>1,60,000</u>
Net profit	10,40,000
Less: Taxes @ 50%	– <u>5,20,000</u>
Profit after taxes	5,20,000
Dividends declared on equity shares	<u>2,20,000</u>

From the above, appraise the financial position of the company from the points of view of: (i) liquidity, (ii) solvency, (iii) profitability, and (iv) activity.

**Solution:**

2009-10

2010-11

(i) *Liquidity ratios:*

(a) Current ratio:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{₹ 25,88,000}{₹ 6,40,000} = 4.04 \quad \frac{₹ 30,52,000}{₹ 8,00,000} = 3.81$$

(b) Acid test ratio:

$$\frac{\text{Quick Assets}}{\text{Current Liabilities}} = \frac{₹ 7,20,000}{₹ 6,40,000} = 1.13 \quad \frac{₹ 8,80,000}{₹ 8,00,000} = 1.10$$

(ii) *Solvency ratios:*

(a) Debt equity ratio:

$$(i) \frac{\text{Total outsiders' debts}}{\text{Equity funds}} = \frac{₹ 22,40,000}{₹ 24,68,000} = 0.91 = \frac{₹ 24,00,000}{₹ 28,12,000} = 0.85$$

$$(ii) \frac{\text{Long – term debts}}{\text{Equity funds}} = \frac{₹ 16,00,000}{₹ 24,68,000} = 0.65 = \frac{₹ 16,00,000}{₹ 28,12,000} = 0.57$$

(b) Interest coverage ratio:

$$\frac{\text{EBIT}}{\text{Interest charges}} = \frac{₹ 12,00,000}{₹ 1,60,000} = 7.5 \text{ times}$$

*(iii) Profitability ratios:*

$$\begin{aligned} \text{(a) Gross profit ratio} &= \frac{\text{Gross Profit} \times 100}{\text{Sales}} \\ &= \frac{\text{₹}12,00,000 \times 100}{40,00,000} = 30\% \end{aligned}$$

$$\begin{aligned} \text{(b) Net profit ratio} &= \frac{\text{Net Profit} \times 100}{\text{Sales}} \\ &= \frac{\text{₹}5,20,000 \times 100}{40,00,000} = 13\% \end{aligned}$$

$$\begin{aligned} \text{(c) Return on total assets} &= \frac{\text{Net Profit} \times 100}{\text{Sales}} \\ &= \frac{\text{₹}5,20,000 \times 100}{64,00,000} = 8.13\% \end{aligned}$$

$$\begin{aligned} \text{(d) Return on capital employed} &= \frac{\text{Net profit before interest and taxes} \times 100}{\text{Total capital employed}} \end{aligned}$$

*Capital Employed:*

Equity Capital	₹ 20,00,000
Retained Earnings	8,12,000
10% Debentures	<u>16,00,000</u>
	<u>44,12,000</u>

$$= \frac{\text{₹}12,00,000 \times 100}{\text{₹}44,12,000} = 27.2\%$$

$$\begin{aligned} \text{(e) Return on equity funds} &= \frac{\text{Net profit after taxes} \times 100}{\text{Equity funds}} \\ &= \frac{\text{₹}5,20,000 \times 100}{28,12,000} = 18.5\% \end{aligned}$$

*(iv) Activity ratios:*

$$\begin{aligned} \text{(a) Debtors turnover ratio} &= \frac{\text{Credit sales}}{\text{Average accounts receivable}} \\ &= \frac{\text{₹}40,00,000}{\text{₹}3,60,000} = 11.11 \text{ times} \end{aligned}$$

**Note:** In the absence of any information, all sales have been treated as credit sales.

(b) Stock turnover ratio

$$= \frac{\text{Cost of sales}}{\text{Average Stock}}$$

$$= = \frac{\text{₹ 28,00,000}}{\text{₹ 20,00,000}} = 1.4 \text{ times}$$

(c) Total asset-turnover ratio

$$= \frac{\text{Cost of goods sold}^*}{\text{Total assets}}$$

$$= \frac{\text{₹ 28,00,000}}{\text{₹ 64,00,000}} = 0.4375 \text{ times}$$

(\*The sales figure can also be used).

The company's position is quite sound from the point of view of liquidity, solvency and profitability. However, its activity ratios particularly in terms of the utilisation of total assets and holding of stock do not seem to be adequate.

### Illustration 9

The balance sheet of Major Ltd. as on 31st March, 2010 is as under:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Share capital:		Fixed assets:	
2,000 equity shares of		At cost	5,00,000
₹100 each fully paid	2,00,000	Less: Depreciation	<u>1,60,000</u>
8% preference shares	1,00,000		3,40,000
General reserve	60,000	Current assets:	
12% debentures	60,000	Stock	60,000
Current liabilities:		Debtors	80,000
Sundry creditors	<u>80,000</u>	Bank	<u>20,000</u>
	<u>5,00,000</u>		<u>5,00,000</u>

The company wishes to forecast balance sheet as on 31st March, 2011. The following additional particulars are available:

- (i) Fixed assets costing ₹1,00,000 have been installed on 1st April, 2010 but the payment will be made on 31st March, 2011.
- (ii) The fixed assets turnover ratio on the basis of gross value of fixed assets would be 1.5.
- (iii) The stock turnover ratio would be 14.4 (calculated on the basis of average stock).
- (iv) The break up of cost and profit would be as follows:
 

Material	40%
----------	-----

Labour	25%
Manufacturing expenses	10%
Office and selling expenses	10%
Depreciation	5%
Profit	<u>10%</u>
	<u>100%</u>

The profit is subject to interest and taxation at 50%.

- (v) Debtors would be 1/9 of sales.
- (vi) Creditors would be 1/5 of material consumed.
- (vii) In March 2011 a dividend @ 10% on equity capital would be paid.
- (viii) 12% debentures for ₹25,000 have been issued on 1st April, 2010.

Prepare the forecast balance sheet as on 31st March, 2011 and show the following resultant ratios:

- (a) Current ratio;
- (b) Fixed assets/net worth ratio; and
- (c) Debt equity ratio.

**Solution:**

**Forecast Balance Sheet of Major Ltd. as on 31.3.2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
<i>Share Capital:</i>		<i>Fixed Assets:</i>	
2,000 Equity shares of ₹100 each	2,00,000	Cost	6,00,000
7-1/2% preference shares	1,00,000	Less: Depreciation	<u>2,05,000</u>
<i>Reserves and Surplus:</i>			3,95,000
General Reserve	60,000	<i>Current Assets:</i>	
Profit & Loss A/c	7,700	Stock	40,000
<i>Secured Loans:</i>		Debtors	1,00,000
12% Debentures	85,000	Cash at bank	29,600
<i>Current Liabilities and Provisions:</i>			
Sundry creditors	72,000		
Provision for taxation	<u>39,900</u>		
	<u>5,64,600</u>		<u>5,64,600</u>

**Ratios:**

$$(a) \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{₹1,70,300}{₹1,11,900} = 1.52$$

$$(b) \text{ Fixed Assets/Net Worth Ratio} = \frac{\text{Fixed Assets}}{\text{Net Worth}} = \frac{\text{₹ } 3,95,000}{\text{₹ } 3,68,400} = 1.07$$

$$(c) \text{ Debt/Equity Ratio} = \frac{\text{Debts}}{\text{Equity}} = \frac{\text{₹ } 85,000}{\text{₹ } 3,68,400} = 0.23$$

$$(OR) = \frac{\text{Debt}}{\text{Debt} + \text{Equity}} = \frac{\text{₹ } 85,000}{\text{₹ } 4,53,400} = 0.19$$

**Working Notes:**(1) *Fixed Assets as on 31.3.2011*

		₹
Balance as on 31.3.2010	5,00,000	
Additions during the year	<u>1,00,000</u>	6,00,000

(2) Sales = Fixed assets x Fixed assets turnover ratio

$$\text{Sales} = \text{₹ } 6,00,000 \times 1.5 \text{ (turnover stands for sales)} = 9,00,000$$

(3) Cost of goods sold:

Material	40%	3,60,000	
Labour	25%	2,25,000	
Manufacturing expenses	10%	90,000	
Depreciation	5%	<u>45,000</u>	7,20,000

(4) Total Depreciation

$$\text{Opening ₹ } 1,60,000 + \text{₹ } 45,000 = 2,05,000$$

(for the year)

(5) Average Stock =  $\frac{\text{Cost of goods sold}}{\text{Stock turnover ratio}}$ 

$$= \frac{\text{₹ } 7,20,000}{14.4} = \text{₹ } 50,000$$

(6) Stock as on 31.3.2011 = (2 x Average stock) – Opening stock

$$= (2 \times 50,000) - 60,000 = \text{₹ } 40,000$$

(7) Debtors on 31.3.2011 = 1/9th of sales =  $\frac{\text{₹ } 9,00,000}{9} = \text{₹ } 1,00,000$ 

(8) Creditors on 31.3.2011 = 1/5th of material consumed

$$= \frac{\text{₹ } 3,60,000}{5} = \text{₹ } 72,000$$

## (9) Cash and Bank Balance

<b>Cash and Bank Account</b>			
Dr.			Cr.
To	₹		₹
Opening Balance	20,000	By Debtors (increase)	20,000
“ Debentures	25,000	” Creditors (decrease)	8,000
“ Profit - 15% on sale before depreciation (Depreciation 45,000 Profit <u>90,000</u> )	1,35,000	” Interest-debentures	10,200
		“ Fixed assets	1,00,000
		“ Preference-dividend	8,000
		“ Equity-dividend	20,000
		“ Tax on distributed profit (@15%)	4,200
“ Stock (decrease)	<u>20,000</u>	“ Closing balance (balancing figure)	<u>29,600</u>
	<u>2,00,000</u>		<u>2,00,000</u>

## (10) Provision for Taxation:

	₹
Profit - 10% of Sales	90,000
Less: Debenture interest	<u>10,200</u>
	<u>79,800</u>
Provision @ 50%	<u>39,900</u>

## (11) Profit and Loss A/c:

Profit - 10% of Sales		90,000
Less: Debenture interest	10,200	
Provision for tax	39,900	
10% dividend on equity shares	20,000	
8% Dividend on preference shares	8,000	
Tax on distributed profit @15%	<u>4,200</u>	<u>82,300</u>
Net profit to Balance Sheet		<u>7,700</u>

**Note:**

- (i) Stock turnover ratio has been calculated with reference to cost of goods sold.
- (ii) Debenture interest has been assumed to be paid.
- (iii) Tax on distributed profit has been assumed to be paid @ 15% on dividend paid.

**Illustration 10:**

From the following information, prepare the projected trading and profit and loss account for the next financial year ending 31st March, 2011 and the projected

balance sheet as on that date:

Gross profit ratio	25%
Net profit to equity capital	10%
Stock turnover ratio	5 times
Average debt collection period	2 months
Creditors velocity	3 months
Current ratio	2
Proprietary ratio (Fixed assets to capital employed)	80%
Capital gearing ratio (Preference shares and debentures to total long-term funds)	30%
General reserve and profit and loss to equity shareholders' fund	20%
Preference share capital to debentures	2

Cost of sales consists of 40% for materials and balance for wages and overheads. Gross profit is ₹6,00,000.

**Projected Trading and Profit & Loss Account  
for the year ending March 31, 2011 :**

Dr.		Cr.	
<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Material used	7,20,000	By Sales	24,00,000
To Wages and overheads	10,80,000		
To Gross profit c/d	<u>6,00,000</u>		
	<u>24,00,000</u>		<u>24,00,000</u>
To Expenses (balancing figure)	4,93,600	By Gross profit b/d	6,00,000
To Net profit	<u>1,06,400</u>		
	<u>6,00,000</u>		<u>6,00,000</u>

**Projected Balance Sheet as on March 31, 2011**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Share Capital :		Fixed Assets	15,20,000
Equity Share Capital	10,64,000	Current Assets :	
Preference Share Capital	3,80,000	Stock	3,60,000
Reserves and Surplus :		Debtors	4,00,000
General Reserve	1,59,600		
Profit & Loss Account	1,06,400		
Secured Loans :			
Debentures	1,90,000		
Current Liabilities :			
Trade Creditors	1,80,000		
Bank Overdraft	<u>2,00,000</u>		
	<u>22,80,000</u>		<u>22,80,000</u>

*Working Notes :*

- ₹
- (i) Gross Profit 6,00,000  
 Gross Profit being 25% of sales  
 Sales = 6,00,000 x 100/25 = ₹24,00,000
- (ii) Cost of Sales = Sales – Gross profit  
 = 24,00,000 – 6,00,000 = ₹18,00,000
- (iii) Material used = 40% of Cost of sales  
 = 40/100 x 18,00,000 = ₹7,20,000
- (iv) Wages and overheads = 18,00,000 – 7,20,000 = ₹10,80,000
- (v) Stock = Cost of sales / Stock turnover ratio = 18,00,000 / 5 = ₹3,60,000
- (vi) Debtors = Sales for 2 months = 24,00,000 x 2/12 = ₹4,00,000
- (vii) As current ratio is 2, Current liabilities are half of current assets  
 Hence, current liabilities =  $\frac{1}{2}$  x (3,60,000 + 4,00,000) = ₹3,80,000
- (viii) Trade Creditors = 3 months of material consumed  
 = 7,20,000 x 3/12 = ₹1,80,000
- (ix) Bank overdraft = ₹3,80,000 – 1,80,000 = ₹2,00,000
- (x) Fixed assets to capital employed = 80%  
 Hence, working capital to capital employed = 20%  
 Working Capital = Current assets – Current liabilities  
 = (3,60,000 + 4,00,000) – 3,80,000 = 3,80,000  
 Fixed assets = 3,80,000 x 80/20 = ₹15,20,000
- (xi) Total long term funds = Fixed Assets + Working Capital  
 = 15,20,000 + 3,80,000 = ₹19,00,000
- (xii) Capital gearing ratio being 30% (Preference share capital plus debentures to Total Long Term Funds)  
 = 30% of 19,00,000 = ₹5,70,000  
 Preference share capital = 5,70,000 x 2/3 = ₹3,80,000
- (xiii) Debentures = 5,70,000 x 1/3 = ₹1,90,000
- (xiv) Equity Shareholders' Fund = 19,00,000 – 5,70,000 = ₹13,30,000  
 General reserve and Profit & Loss Account = 20% of equity shareholders' fund = 20% of 13,30,000 = ₹2,66,000  
 Equity share capital = 13,30,000 – 2,66,000 = ₹10,64,000
- (xv) Net profit = 10% of Equity share capital = ₹1,06,400
- (xvi) General Reserve = ₹2,66,000 – 1,06,400 = ₹1,59,600

**Illustration 11:**

From the following information prepare balance sheet of Zebra Ltd.

(i) Current Ratio	2.5
(ii) Liquid Ratio	1.5
(iii) Proprietary Ratio	0.75
(iv) Working Capital	₹ 60,000
(v) Reserves and surplus	₹ 40,000
(vi) Bank overdraft	₹ 10,000

There are no long term loan or fixed assets

**Solution:****Zebra Ltd.****Balance Sheet as at.....**

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Capital	2,00,000	Fixed assets	1,80,000
Reserves and surplus	40,000	Stock	40,000
Bank overdraft	10,000	Other current assets	60,000
Other current liabilities	<u>30,000</u>		
	<u>2,80,000</u>		<u>2,80,000</u>

**Working Notes:**

- (1) Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.5$
- Current Asset = 2.5 (Current liabilities)
- Working Capital = Current assets – Current liabilities
- ₹ 60,000 = 2.5 (Current liabilities) – Current liabilities
- ₹ 60,000 = 1.5 (Current liabilities)
- Current liabilities = ₹ 40,000
- Therefore, Current assets = ₹ 1,00,000
- Other current Liabilities = ₹ 40,000 – Bank overdraft = ₹ 30,000
- (2) Proprietary funds + Current liabilities = Current assets + Fixed assets
- $\frac{\text{Fixed Assets}}{\text{Proprietary Funds}} = 0.75$  (Given)
- Fixed assets = 0.75 (Proprietary funds)
- Substituting in the equation above
- Proprietary funds + ₹ 40,000 = ₹ 1,00,000 + 0.75 (Proprietary funds)
- 0.25 Proprietary funds = ₹ 60,000

Proprietary funds = ₹2, 40,000

Hence,

Fixed assets = 0.75 (2, 40,000)

Fixed assets = ₹1, 80,000

Share capital = Proprietary funds – Reserve and surplus  
= ₹2, 40,000 – ₹40,000 = ₹2, 00,000

$$(3) \text{ Liquid ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}} = 1.5$$

Liquid assets = ₹60,000 i.e. 1.5 (Current liabilities)

Therefore, stock = ₹1,00,000 – ₹60,000 = ₹40,000

(i.e. Stock = Current assets – Liquid assets)

**Note:** Alternatively liquid ratio can be interpreted as:

$$\text{Liquid ratio} = \frac{\text{Current assets} - \text{Stocks}}{\text{Current liabilities} - \text{Bank overdraft}}$$

Then the value of stock and other current assets will be changed accordingly.

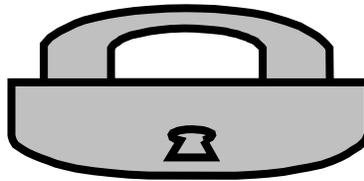
#### LESSON ROUND UP



- Financial statements generally refer to balance sheet or position statement and profit and loss account or income statement. Of course, a business may also prepare a statement of retained earnings and a cash flow statement.
- Financial statements are prepared on the basis of (i) recorded facts; (ii) accounting conventions; (iii) postulates; (iv) personal judgements, and (v) accounting standards and guidance notes.
- Attributes of financial statements cover – relevance, accuracy and freedom from bias, comparability, analytical presentation, promptness, generally accepted principles, consistency, authenticity and compliance with laws.
- Financial statements are very much relevant to – the management, the public, the shareholders and the lenders, the labour and trade unions, the country and economy.
- In addition to the statutory requirements, the recent trends in presenting financial statements may include - summarised profit and loss account and balance sheet, highlights, cash flow statements, important accounting ratios, disclosure of accounting policies, charts, graphs and diagrams, schedules, impact of price level changes, rounding off of figures, etc.

- According to modus operandi of analysis financial statement, analysis may be horizontal and vertical.
- According to the objective of the analysis financial statement, analysis can be long-term and short-term.
- Analytical methods and devices used in analysing financial statements include - comparative statements, common size statements, trend ratios, ratio analysis and cash flow statements.
- Accounting ratios are relationships, expressed in arithmetical terms, between figures which have a cause and effect relationship or which are connected with each other in some other manner.
- Ratios may be classified according to the statement upon which they are based, function and importance.
- The functional ratios can be further classified into - profitability ratios, turnover ratios or activity ratios, financial ratios or solvency ratios and market test ratios.

### SELF TEST QUESTIONS



1. Explain the concept of interpretation and criticism of financial statements?
2. What are the objectives of financial statements?
3. Discuss the limitations of financial statements and point out how these limitations can be removed through management accounting.
4. Explain the various ways of presentation of financial statements.
5. How will you interpret and analyse financial statement presented to you?
6. What is the common size balance sheet and income statement? Explain the technique of preparing common size balance sheet.
7. What are the trend ratios? Explain the technique of computing trend ratios.
8. Explain the significance of ratio analysis in financial management.
9. Explain briefly the different ratios that are commonly used and show how they are useful in financial analysis.
10. Explain different ratios coming under:
  - (a) Profitability ratios
  - (b) Overall measure of efficiency ratio
11. (a) Explain the uses of ratio analysis.
  - (b) What are the limitations of ratio analysis.

12. Write short notes on:
- Liquidity test ratio
  - Acid test ratio
  - Profitability test ratios
  - Turnover ratios.
13. "Inter-firm comparison is carried out with the help of ratios although they are not exclusive and conclusive indicators of performance". Examine.
14. Prepare a proforma income statement for the month of April, May and June for Eastern Ltd. from the following informations:
- Sales are projected at ₹4,50,000, ₹4,80,000 and ₹4,30,000 for April, May and June respectively.
  - Cost of goods sold is ₹1,00,000 plus 30% of selling price per month.
  - Selling expenses are 4% of sales.
  - Rent ₹15,000 per month.
  - Administrative expenses for April are expected to be ₹1,20,000 but are expected to rise 2% per month over the previous month's expenses.
  - The company has ₹5,00,000 of 12% loan, interest payable monthly.
  - Corporate tax expected is 40%.
15. The Newman Company Ltd. is in the midst of a promotional campaign to boost sales. In 2010-11 an additional ₹70,000 was spent on advertising. Presented below are revenue and expense data for the company.

	2010-11	2009-10
	₹	₹
Sales	8,16,000	6,56,500
Sales returns and allowances	16,000	6,500
Cost of goods sold	4,00,000	3,12,000
Selling expenses	2,00,000	1,30,000
General expenses	1,20,000	78,000
Miscellaneous income	6,400	6,500
Income-tax	32,000	67,600

You are required to prepare a comparative statement for the year 2010-11 and 2009-10 for the company. Also comment on the relationships revealed in the comparative income statements.

16. On the basis of the following figures derived from the accounts of a company, prepare a report on the level of efficiency of financial and operational management of the company:

Years	Capital Turnover Ratio	Net Profit on Sales (%)	ROI (%)	Current Ratio
1	1.0	8	8	6.0
2	2.0	10	20	4.0

3	3.0	11.5	34.5	2.0
4	5.0	13	65	0.5

17. The profit and loss and balance sheet of Happy Ltd. is given below:

**Profit & Loss Account for the year ended 31st March, 2011**

	₹		₹
To Opening stock	90,000	By Sales	9,00,000
To Purchases	5,60,000	By Closing stock	90,000
To Wages	2,14,000		
To Gross profit	<u>1,26,000</u>		
	<u>9,90,000</u>		<u>9,90,000</u>
To Salaries	16,000	By Gross profit	1,26,000
To Electricity	10,000		
To Miscellaneous expenses	10,000		
To Depreciation	30,000		
To Net profit	<u>60,000</u>		
	<u>1,26,000</u>		<u>1,26,000</u>

**Balance Sheet as on 31.3.2011**

	₹		₹
Share capital:		Fixed assets	5,40,000
Equity shares	1,80,000	Less: Depreciation	<u>1,50,000</u> 3,90,000
Reserve and surplus	1,20,000	Current assets:	
Secured loans	2,10,000	Stock	90,000
Current liabilities:		Sundry debtors	1,05,000
Sundry creditors	<u>90,000</u>	Cash	<u>15,000</u> 2,10,000
	<u>6,00,000</u>		<u>6,00,000</u>

Discuss under the following important functional groupings the usual ratios and comment on the financial strength of the company:

- (i) Liquidity and solvency test ratios;
- (ii) Profitability test ratios; and
- (iii) Overall measures ratios.

18. Prepare Balance Sheet and Profit and Loss Account from the following information:

	₹
Capital	4,00,000
Working capital	1,80,000
Bank overdraft	30,000

There is no fictitious asset. Current assets contain only stock, debtors and cash. The following additional data is also available:

- (i) Closing stock is 20% higher than opening stock

- (ii) Current ratio - 2.5
- (iii) Quick ratio - 2.0
- (iv) Proprietary ratio - 0.6 (Fixed assets: Proprietary fund)
- (v) Gross profit ratio - 20% (of sales)
- (vi) Stock velocity - 5
- (vii) Debtor's velocity - 73 days
- (viii) Net profit ratio - 10% (to average capital employed).

19. The following are the summarised profit and loss account and balance sheet of Waldo Company Ltd., for the year ending 31st March, 2011.

#### Profit and Loss Account

	₹		₹
To Opening stock	9,950	By Sales	85,000
To Purchases	54,525	By Closing stock	14,900
To Incidental expenses	1,425		
To Gross profit	<u>34,000</u>		
	<u>99,900</u>		<u>99,900</u>
To Operating expenses:		By Gross profit	34,000
Selling and distribution	3,000	By Non-operating	
Administration	16,500	income-interest	300
To Non-operating expenses:		By Profit on sale of shares	600
Loss on sale of assets	400		
To Net profit	<u>15,000</u>		
	<u>34,900</u>		<u>34,900</u>

#### Balance Sheet

Issued Capital		Land and building	15,000
2,000 equity shares of		Plant and machinery	8,000
₹10 each	20,000	Stock in trade	14,900
Reserves	9,000	Sundry debtors	7,100
Profit and loss account	6,000	Cash and bank balance	3,000
Current liabilities	<u>13,000</u>		
	<u>48,000</u>		<u>48,000</u>

You are required to calculate:

- (a) Current ratio
- (b) Operating ratio
- (c) Stock turnover ratio
- (d) Return on total resources
- (e) Turnover of fixed assets.

20. From the following information you are required to calculate- (i) Sales; (ii) Sundry Debtors; (iii) Sundry Creditors; (iv) Closing stock;

Debtors velocity ratio	3 months
Stock velocity ratio	6 months
Creditors velocity ratio	2 months
Gross profit ratio	25%

The gross profit for the year ended 31<sup>st</sup> March 2011 was ₹5,00,000. Stock for the same period was ₹20,000 more than it was in the beginning of the year. Bills receivable and bills payable were ₹1,50,000 and ₹83,333 respectively.

21. Calculate working capital turnover ratio from the following information:

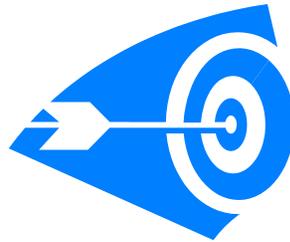
Current ratio	= 5:3
Quick ratio	= 3:5
Inventory turnover ratio	= 5 times
Closing Stock was ₹1,92,000 less than opening stock	
Gross profit	= 25% on cost
Average debt collection period	= 3 months
Cash sales	= 25% of Total sales
Opening debtors	= ₹2,80,000
Closing debtors	= ₹3,20,000

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## STUDY XVI

# CASH FLOW STATEMENT

### LEARNING OBJECTIVES



Understand the meaning of cash flow statement.

- Identify the sources and application of cash flow from operating, investing and financing activities.
- Ascertain the accounting impact of various transactions on various different items to be shown in cash flow statement.
- Prepare cash flow statement by direct and indirect method.
- Know the usefulness of cash flow statement.

### INTRODUCTION

When it is desired to explain to management the sources of cash and its uses during a particular period of time, a statement known as cash flow statement is prepared. A statement of cash flows reports the inflows (receipts) and outflows (payments) of cash and its equivalents of an organisation during a particular period. It provides important information that compliments profit and loss account and balance sheet. A statement of cash flow reports cash receipts and payments classified according to the entities' major activities - operating, investing and financing during the period. This statement reports a net cash inflow or net cash outflow for each activity and for the overall business. It also reports from where cash has come and how it has been spent. It explains the causes for the changes in the cash balance. In substance, the cash flow statement summarises a myriad of specific cash transactions into a few categories for a business entity. The statement of cash flows reports the cash receipts, cash payments, and net changes in cash resulting from operating, investing and financing activities of an enterprise during a period in a format that reconciles the beginning and ending cash balances.

In view of the significant contribution of the statement of cash flows, the Institute of Chartered Accountants of India has issued in March, 1997 Accounting Standard-3 (Revised) (AS-3 Revised) „Cash Flow Statements' in suppression of Accounting Standard-3 "Changes in Financial Position" issued in June 1981. It is in tune with the trends in other countries where cash flow statement has replaced the "Statement of Changes in Financial Position". As such cash flow statement should be prepared in

line with the stipulations given in AS-3 (Revised). According to the revised Accounting Standard-3, an organisation should prepare a cash flow statement and should present it for each period.

Meaning of certain terms used in this context:

**Cash:** Cash comprises cash in hand and demand deposits with banks. Demand deposits mean those deposits which are repayable by bank on demand by the depositor.

**Cash equivalents:** Cash equivalents are short term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Cash equivalents are held for the purpose of meeting short term cash commitments rather than for investments or other purposes. Examples of cash equivalents are treasury bills, commercial paper etc. Investments in shares are excluded from cash equivalents unless they are in substance cash equivalents, for example preference shares of a company acquired shortly before their specified redemption date (provided there is only an insignificant risk of failure of the company to repay the amount at maturity).

**Cash flows:** Cash flows are inflows and outflows of cash and cash equivalents. It means the movement of cash into the organisation and movement of cash out of the organisation. The difference between the cash inflows and outflows is known as net cash flow which can be either net cash inflow or net cash outflow. Cash flows exclude movements between items that constitute cash or cash equivalents because these components are part of the cash management of an enterprise rather than part of its operating, investing and financing activities. Cash management includes the investment of excess cash in cash equivalents.

## 2. CLASSIFICATION OF CASH FLOWS

The cash flow statement during a period is classified into three main categories of cash inflows and cash outflows i.e. operating, investing and financing activities.

### (i) *Cash Flows from Operating Activities*

Operating activities are the principal revenue-producing activities of the enterprise and other activities that are not investing and financing activities. Operating activities include cash effects of those transactions and events that enter into the determination of net profit or loss.

A business's normal operations result in both cash receipts and cash payments. Cash receipts result from selling goods and providing services. The cost of goods sold and other operative expenses result in cash disbursements. The revenues and expenses reported in the income statement, however, do not coincide with the cash receipts and payments as we prepare the income statement on an accrual basis. The receipts and payments of cash for these revenues and expenses may occur in either an earlier or later period than the period we report the revenues and expenses.

Following are examples of cash flows from operating activities:

- (a) cash receipts from the sale of goods and the rendering of services;

- (b) cash receipts from royalties, fees, commissions, and other revenues;
- (c) cash payments to suppliers for goods and services;
- (d) cash payments to and on behalf of employees;
- (e) cash receipts and payments of an insurance enterprise for premiums and claims, annuities and other policy benefits;
- (f) cash payments or refunds of income taxes unless they can be specifically identified with financing and investing activities; and
- (g) cash receipts and payments relating to future contracts, forward contracts, option contracts, and swap contracts when the contracts are held for dealing or trading purposes.

*(ii) Cash Flows from Investing Activities*

Investing activities are the acquisition and disposal of long term assets and other investments not included in cash equivalents. In other words, investing activities include transactions and events that involve the purchase and sale of long-term productive assets (e.g. land, building, plant and machinery etc.) not held for resale and other investments. The following are examples of cash flows arising from investing activities:

- (a) cash payments to acquire fixed assets (including intangibles). These payments include those relating to capitalised research and development costs and self-constructed fixed assets;
- (b) cash receipts from disposal of fixed assets (including intangibles);
- (c) cash payments to acquire shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes);
- (d) cash receipts from disposal of shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than receipts from those instruments considered to be cash equivalents and those held for dealing or trading purposes);
- (e) cash advances and loans made to third parties (other than advances and loans made by a financial enterprise);
- (f) cash receipts from the repayment of advances and loans made to third parties (other than advances and loans of a financial enterprise);
- (g) cash receipts and payments relating to future contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes, or the transactions are classified as financing activities.

*(iii) Cash Flows from Financing Activities*

Financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in the case of a company) and borrowings of the enterprise. Following are the examples of cash

flows arising from financing activities:

- (a) cash proceeds from issuing shares or other similar instruments;
- (b) cash proceeds from issuing debentures, loans notes, bonds and other short term borrowing.
- (c) cash repayments of amounts borrowed i.e. redemption of debentures, bonds etc.
- (d) cash payments to redeem preference shares.
- (e) payment of dividend.

### **3. SPECIAL ITEMS**

In addition to the general classification of three types of cash flows, Accounting Standard-3 (Revised) provides for the treatment of the cash flows of certain special items as under:

#### *(a) Foreign Currency Cash Flows*

Cash flows arising from transactions in a foreign currency should be recorded in an enterprise's reporting currency by applying to the foreign currency amount the exchange rate between the reporting currency and foreign currency at the date of cash flow. A rate that approximates actual rate may be used if the result is substantially the same as would arise if the rates at the date of cash flows were used. Unrealised gains and losses arising from changes in foreign exchange rates are not cash flows. However, the effect of exchange rate changes on cash and cash equivalents held or due in foreign currency is reported in the cash flow statement in order to reconcile cash and cash equivalents at the beginning and the end of the period. This amount is presented separately from cash flows from operating, investing and financing activities and includes the differences, if any, had those cash flows been reported at the end of period exchange rates.

#### *(b) Extraordinary Items*

The cash flows associated with extra-ordinary items such as bad debts recovered, claims from insurance companies, winning of a law suit or lottery etc. are disclosed separately as arising from operating, investing or financing activities as the case may be, in the cash flow statement.

#### *(c) Interest and Dividends*

According to Accounting Standard-3 (Revised), the treatment of interest and dividends, received and paid, depends upon the nature of the enterprise, that is, financial enterprises and other enterprises.

- (i) In the case of financial enterprises: Cash flows arising from interest paid and interest and dividends received, should be classified as cash flows from operating activities.
- (ii) In the case of other enterprises:
  - cash flows arising from interest paid should be classified as cash flows from financing activities.
  - cash flows arising from interest and dividends received should be classified as cash flows from investing activities;

- dividends paid should be classified as cash flows from financing activities.

In all cases, cash flows from interest and dividends received and paid should be disclosed separately. Also the total amount of interest paid during the period is disclosed in the cash flow statement whether it has been recognised as an expense in the profit and loss account or capitalised in accordance with AS-10, Accounting for Fixed Assets.

*(d) Taxes on Income*

Cash flows arising from taxes on income should be separately disclosed and should be classified as cash flows from operating activities unless they can be specifically identified with financing and investing activities. Taxes on income arise on transactions that give rise to cash flows that are classified as operating, investing or financing activities in a cash flow statement. While tax expense may be readily identifiable with investing or financing activities, the related tax cash flows are often impracticable to identify and may arise in a different period from the cash flows of the underlying transactions. Therefore taxes paid are usually treated as cash flows from operating activities. However, in case it is possible to identify the tax cash flow with an individual transaction that gives rise to cash flows that are classified as investing or financing activities, it is appropriate to classify the tax cash flow as an investing or financing activity.

*(e) Acquisition and Disposals of Subsidiaries and other Business Units*

The aggregate cash flows arising from acquisitions and from disposals of subsidiaries or other business units should be presented separately and classified as investing activities.

*(f) Non-cash Transactions*

Investing and financing transactions that do not require the use of cash or cash equivalents should be excluded from a cash flow statement. Such transactions should be disclosed elsewhere in the financial statements in a way that provides all the relevant information about these investing and financing activities. The exclusion of non-cash transactions from the cash flow statement is consistent with the objective of a cash flow statement as these do not involve cash flows in the current period. Following are examples of non-cash transactions:

- (i) the acquisition of assets by assuming directly related liabilities.
- (ii) the acquisition of an enterprise by means of issue of shares.
- (iii) conversion of debt into equity.

#### **4. PREPARATION OF A CASH FLOW STATEMENT**

The following basic informations are required for the preparation of a cash flow statement:

- (i) *Comparative Balance Sheets*: Balance sheets at the beginning and at the end of the accounting period indicate the amount of changes that have taken place in assets, liabilities and capital.

- (ii) *Profit and Loss Account*: The profit and loss account of the current period enables to determine the amount of cash provided by or used in operations during the accounting period after making adjustments for non-cash, current assets and current liabilities.
- (iii) *Additional data*: In additions to the above statements additional data are collected to determine how cash has been provided or used e.g. sale or purchase of assets for cash.

The following procedure may be used for the preparation of a cash flow statement:

- (i) Calculation of net increase (decrease) in cash and cash equivalents accounts. The difference between cash and cash equivalents for the period may be computed by comparing these accounts given in the comparative balance sheets. The results will be cash receipts and payments during the period responsible for the increase or decrease in cash and cash equivalent items.
- (ii) Calculation of the net cash provided (used) by operating activities. It is by the analysis of profit and loss account, comparative balance sheet and selected additional information.
- (iii) Calculation of the net cash provided (used) by investing and financing activities. All other changes in the balance sheet item must be analysed taking into account the additional information and effect on cash may be grouped under the investing and financing activities.
- (iv) Preparation of a cash flow statement. It may be prepared by classifying all cash inflows and outflows in terms of operating, investing and financing activities. The net cash flow provided by (used) in each of the three activities may be highlighted.
- (v) Ensure that the aggregate of net cash flows from operating, investing and financing activities is equal to net increase (decrease) in cash and cash equivalents.
- (vi) Report any significant investing/financing transactions that did not involve cash or cash equivalents in a separate schedule to the cash flow statement.

## **5. REPORTING OF CASH FLOWS FROM OPERATING ACTIVITIES**

Net profit/loss as reported in the profit and loss account is different from the net cash flow from operating activities as the financial statements are generally prepared on accrual basis of accounting under which the net income will not indicate the net cash provided by or net loss will not indicate the net cash used in operating activities. In order to calculate the net cash flows in operating activities, it is necessary to replace revenues and expenses with actual receipts and payments in cash. This is done by eliminating the non-cash revenues and/non-cash expenses from given earned revenues and incurred expenses. There are two methods of converting net profit into net cash flows from operating activities:

- (i) Direct method, and
- (ii) Indirect method.

### 5.1 Direct Method

Under direct method, cash receipts from operating revenues and cash payments for operating expenses are arranged and presented in the cash flow statement. The difference between cash receipts and cash payments is the net cash flow from operating activities. It is in effect a cash basis profit and loss account. In this case each cash transaction is analysed separately and the total cash receipts and payments for the period is determined. The summarised data for revenue and expenses can be obtained from the financial statements and additional information. We may convert accrual basis of revenue and expenses to equivalent cash receipts and payments. Make sure that a uniform procedure is adopted for converting accrual base items to cash base items.

The following are some examples of usual cash receipts and cash payments resulting from operating activities:

- (i) Cash sales of goods and services;
- (ii) Cash collected from debtors (customers);
- (iii) Cash receipts of interest or dividends;
- (iv) Cash receipts of royalties, fees, commission and other revenues;
- (v) Cash payments to suppliers (creditors);
- (vi) Cash payments for various operating expenses i.e. rent, rates, power etc.
- (vii) Cash payments for wages and salaries to employees;
- (viii) Cash payments for income tax etc.

Under *direct method*, information about major classes of gross cash receipts and gross cash payments may be obtained either:

- (a) from the accounting records of the enterprise; or
- (b) by adjusting sales, cost of sales and other items in the statement of profit and loss for:
  - Changes during the period in inventories and operating receivables and payables;
  - Other non-cash items, and
  - Other items for which the cash effects are investing or financing cash flows.

Some of the items to be shown in the cash flow statement are illustrated below:

**Collections from Customers:** If a business has only cash sales, the amount of sales revenue in the income statement is the amount of cash collected from the customers. However, when the business has credit sales we have to adjust the amount of sales revenue for changes in debtors and bills receivable. The opening balance of debtors or bills receivable represents uncollected amount from a previous period and it is presumed that cash has been collected during the current accounting period. The closing balance of debtors or bills receivable represents uncollected amount in the current accounting period. Therefore in order to calculate the cash received from debtors, the

opening balance (debtors/bills receivable) should be added to the amount of credit sales and closing balance should be subtracted therefrom.

Alternatively, Cash Collected from Debtors can also be calculated as given below:

Cash Collected from Debtors = Credit Sales + Decrease in Accounts Receivable  
or - Increase in Accounts Receivable.

**Payment to Suppliers:** The analysis of cash payments to suppliers begins with cost of goods sold from the profit and loss account. The amount of purchases is calculated by adding closing stock and subtracting opening stock from the cost of goods sold. The cash payment made to suppliers is calculated by making adjustments for change in sundry creditors/bills payable.

Thus,

Purchases = Cost of Goods Sold + Closing Stock - Opening Stock

Or

Purchases = Cost of Goods Sold + Increase in Stock or - Decrease in Stock

Cash Paid to Suppliers = Purchases + Opening Balance of Creditors (Bills Payable) - Closing Balance of Creditors (Bills Payable).

Alternatively,

Cash Paid to Suppliers = Purchases + Decrease in Accounts Payable or - Increase in Accounts Payable.

**Payment to Employees:**

Cash Paid for Wages and Salaries = Wages and Salaries Expenses + Opening Balance of Outstanding Wages and Salaries - Closing Balance of Outstanding Wages and Salaries.

Alternatively,

Cash Paid for Wages and Salaries = Wages and Salaries Expenses + Decrease in Wages and Salaries Payable or - Increase in Wages and Salaries Payable.

**Rent Received:** The analysis of rent received is similar to cash collected from customers.

Rent Received = Rent Revenue + Opening Balance of Rent Receivable - Closing Balance of Rent Receivable.

Alternatively,

Rent Received = Rent Revenue + Decrease in Rent Receivable or - Increase in Rent Receivable.

**Interest Paid:** The analysis of interest paid is similar to the analysis of payments to employees.

Interest Paid = Interest Expenses + Opening Balance of Outstanding Interest - Closing Balance of Outstanding Interest.

Alternatively,

Interest Paid = Interest Expenses + Decrease in Interest Payable, or - Increase in Interest Payable.

A similar treatment is applied for various other income and expenses to find out the cash inflows or outflows

**Insurance:** Different procedure is adopted for insurance expense because insurance is usually purchased (and recorded as an asset) before it becomes an expense. The treatment is as follows:

Cash Paid for Insurance = Insurance Expenses + Closing Balance of Unexpired Insurance - Opening Balance of Unexpired Insurance.

Alternatively,

Cash Paid for Insurance = Insurance Expenses + Increase in Unexpired Insurance or - Decrease in Unexpired Insurance.

A similar treatment is applied for other prepaid expenses also.

In direct method of calculating cash flow from operations, the following points should be noted:

- (i) The necessary adjustments should be made for bad debts, sales returns, purchases returns, discount allowed, discount received etc. while calculating the amount received from the customers or paid to suppliers, as the case may be.
- (ii) Items like depreciation, amortisation of intangible assets (such as goodwill, patent, trade mark etc.) or of debenture discount, preliminary expenses, premium on redemption of debentures and preference shares are ignored from the cash flow statement since the method analyses and includes only cash transactions and therefore, non-cash items are omitted from a statement of cash flows.
- (iii) No adjustment is made for loss or gain on the sale of fixed assets and investments since operating cash receipts and payments are reported directly on the cash flow statement.

## 5.2 Indirect Method

In this method the net profit (loss) is used as the base to calculate net cash provided by or used in operating activities. Non-cash and non-operating charges in the profit and loss account are added back to the net profit while non-cash and non-operating credits are deducted to calculate operating profit before working capital changes. It is a partial conversion of accrual basis profit to cash basis profit. Then necessary adjustments are made for increase/decrease in current assets and current liabilities to obtain net cash from operating activities.

A summary of adjustments required to convert the net profit to net cash flow from operating activities through indirect method is as follows:

A. Net profit before tax and extraordinary item -

*B. Adjustments for non-cash and non-operating items:*

*Add:* Amount written off in respect of depreciation, goodwill, preliminary expenses, underwriting commission etc.

*Add/Less: Other non-operating items*

*C. Adjustment for gains and losses on sale of fixed assets and investments*

*Add: Loss on sale of fixed assets/investments*

*Less: Profit on sale of fixed assets/investments*

*D. Adjustments for changes in current assets (except cash and cash equivalents) and current liabilities (except bank overdraft)*

*Add: Decrease in accounts of current assets e.g. debtors, bill receivable, stock, prepaid expenses etc.*

*Less: Increase in accounts of current assets.*

*Add: Increase in accounts of current liabilities; e.g., creditors, bills payable, outstanding expenses, etc.*

*Less: Decrease in accounts of current liabilities.*

*E. Cash generated from operations*

*Less: Income tax paid.*

*F. Adjustments for extra-ordinary items if any.*

*G. Net cash from (used in) operating activities*

The computation of net cash inflow or cash outflow from operating activities by the indirect method takes a path that is very different from the computation by the direct method. However, the two methods arrive at the same amount of net cash flow from operations.

The logic behind the treatment of various items are explained as follows:

*Adjustment for Depreciation and other Non-cash and Non-operating items*

Depreciation, depletion and amortisation of expenses (amortisation of goodwill, preliminary expenses, premium on redemption of debentures, underwriting commission, etc.) do not affect cash and thus should be added back to the net profit in the cash flow statement. When depreciation is provided it has no effect on cash. However, depreciation is deducted from revenues for the computation of income. Therefore, in going from net profit to cash flow from operations, we add depreciation back to net profit. Likewise, all expenses with no cash effects are added back to net profit in the cash flow statement. In the same manner, revenues that do not provide cash are subtracted from net profit.

*Adjustment for Gains and Losses on Sale of Fixed Assets/Investments*

When fixed assets or investments are sold, there may be either profit or loss on sale. Such profit or loss affects the amount of net profit. For instance, when fixed assets, with a book value of ₹75,000 was sold for ₹90,000 the actual inflow of cash is ₹90,000 which would be reflected in the cash flow statement including a profit of ₹15,000. But this profit on sale of fixed asset has already increased the net profit indicating an inflow of cash from operating activities. In order to avoid this duplication, this profit of ₹15,000 must be deducted from the net profit. Moreover sale of fixed assets is an investing activity and therefore effect of this profit on sale must be removed from cash flow from operations. Likewise, a loss on sale of fixed assets or investment also require an adjustment to the net profit in the cash flow from operations. This loss is added back to the net profit to compute cash flow from operations.

### *Changes in Current Assets and Liabilities*

Most current assets and current liabilities result from operating activities. Sundry debtors and bills receivable result from sales, inventory generates revenues and prepaid expenses are used in operations. On the liabilities side sundry creditors and bills payable are ordinarily incurred to buy inventory and outstanding liabilities relate to salaries, utilities and other expenses. Changes in these current assets and liabilities are reported as adjustments to net profit on the cash flows statement. The following rules apply:

- (a) An increase in current assets other than cash is deducted from net profit to calculate cash flow from operations: For example, when sundry debtors (net) increase during the year, this means that revenues on accrual basis are higher than revenues on cash basis since goods sold on credit are treated as revenues on accrual basis. In other words, the business operations in the period covered resulted in more revenues but not all these revenues resulted in corresponding increase in cash. Some of the revenues resulted in an increase in debtors only. In order to convert the net profit to net cash provided by operating activities the increase in debtors must be deducted from the reported net profit. However, a decrease in current assets has opposite effect and has to be added back to net profit to determine cash provided for the period.
- (b) An increase in current liability is added to net profit to arrive at the cash from operation. For example when, sundry creditors increase during the period covered, it means that expenses on accrual basis are more than they are on cash basis because expenses are incurred for which no payment has been made. So this increase must be added to net profit. However, a decrease in a current liability is subtracted from net profit, since more cash has been paid than the expenses recorded on accrual basis.

## **6. FORMAT OF CASH FLOW STATEMENT**

Accounting Standard-3 (Revised) has not provided any specific format for the preparation of cash flow statements, but a general idea can be had from the illustration appearing thereof. There seems to be flexibility in the presentation of cash flow statements. However, a widely accepted format under direct method and indirect method is given below:

### **Cash Flow Statement (Direct Method)**

#### ***A. Cash flows from operating activities***

Cash receipts from customers  
Cash paid to suppliers and employees  
Cash generated from operations  
Income taxes paid  
Cash flow before extraordinary item  
Proceeds from earthquake disaster settlement  
*Net Cash from Operating Activities*

**B. Cash flows from investing activities**

Purchase of fixed assets  
 Proceeds from sale of equipment  
 Interest received  
 Dividend received  
*Net Cash from Investing Activities*

**C. Cash flows from financing activities**

Proceeds from issuance of share capital  
 Proceeds from long-term borrowings  
 Repayments of long-term borrowings  
 Interest paid  
 Dividend paid  
*Net Cash from Financing Activities*  
 Net Increase (Decrease) in Cash and Cash Equivalents (A + B + C)  
 Cash and Cash Equivalents at Beginning of Period  
 Cash and Cash Equivalents at End of Period

**Cash Flow Statement (Indirect Method)****A. Cash flows from operating activities**

Net profit before tax and extraordinary items  
 Adjustments for:  
 Depreciation  
 Foreign exchange  
 Investments  
 Gain or loss on sale of fixed assets  
 Interest/dividend  
 Operating profit before working capital changes.  
 Adjustments for:  
 Trade & other receivables  
 Inventories  
 Trade payables  
 Cash generation from operations:  
 Interest paid  
 Direct taxes  
 Cash before extraordinary items  
 Deferred revenue  
*Net Cash from Operating Activities.*

**B. Cash flows from investing activities**

Purchase of fixed assets  
 Sale of fixed assets  
 Sale of investments  
 Purchase of investments  
 Interest received  
 Dividend received

Loans to subsidiaries

*Net Cash from Investing Activities*

**C. Cash flows from financing activities**

Proceeds from issue of share capital

Proceeds from long term borrowings

Repayment to finance/lease liabilities

Dividend paid

*Net Cash from Financing Activities*

Net Increase (Decrease) in Cash and Cash Equivalents (A + B + C)

Cash and Cash Equivalents at the Beginning of the Period

Cash and Cash Equivalents at the End of the Period

***Alternatively the Cash Flows from Operating Activities (Indirect Method) may be summarised as below:***

Net profit before tax and extra-ordinary items

***Adjustments for non-cash and non-operating items***

(+) Depreciation

(+) Amortization of intangible assets, preliminary expenses, debenture discount and the like.

(+) or ( - ) Other non-cash and non-operating items included in net profit

***Adjustments for gains and losses on sale of fixed assets and investments***

( - ) Gains on sale of fixed assets and investments

(+) Loss on sale of fixed assets and investments

***Adjustments for changes in current assets and current liabilities***

( - ) Increases in current assets

(+) Decreases in current assets

(+) Increases in current liabilities

( - ) Decreases in current liabilities

( - ) Income-tax paid

( - ) Extraordinary items

***Net Cash Flows from Operating activities***

**7. USEFULNESS OF CASH FLOW STATEMENT**

The purpose of cash flow statement is to provide information about the cash flows associated with the periods of operations and also about the entity's investing and financing activities during the period. This information is important to shareholders, part of whose investment return (dividends) is dependent on cash flows and to lenders, whose interest payment and principal repayment require the use of cash. The welfare of other constituents of a company including its employees, its suppliers, and the local bodies that may levy taxes on it, depends to varying degrees on the company's activity to generate adequate cash flows to fulfil its financial obligations. The usefulness of cash flow statement can be summarised as follows:

- (i) *Predict future cash flows:* The cash flow statement makes it possible to

predict the amounts, timing and uncertainty of future cash flows on the basis of what has happened in the past. This approach is better than accrual basis data presented by profit and loss account and the balance sheet.

- (ii) *Determine the ability to pay dividends and other commitments:* A cash flow statement indicates the sources and uses of cash under suitable headings such as operating, investing and financing activities. Shareholders are interested in receiving dividends on their investments in the shares. Creditors want to receive their interest and principal amount on time. The statement of cash flows helps investors and creditors to predict whether the business can make these payments.
- (iii) *Show the relationship of net income to changes in the business cash:* Usually cash and net income move together. High levels of income tend to lead to increase in cash and *vice-versa*. However, a company's cash balance can decrease when its net income is high, and cash can increase when income is low. The users want to know the difference between the net profit and net cash provided by operations. The net profit shows the progress of the business during the year while cash flow relates more to the liquidity of the business. The users can assess the reliability of net profit with the help of cash flow statement.
- (iv) *Efficiency in cash management:* Cash flow analysis helps in evaluating financial policies and cash position. It facilitates the management to plan and co-ordinate the financial operations properly. The management can estimate how much funds are needed, from which source they will be derived, how much can be generated internally and how much should be arranged from outside.
- (v) *Discloses the movement of cash:* A comparison of cash flow statement for the previous year with the budget for that year would indicate to what extent the resources of the enterprise were raised and applied. A comparison of the original forecast with actual result may highlight trend of movement that might otherwise remain undetected.
- (vi) *Discloses success or failure of cash planning:* A success or failure of cash planning can be known by comparing the projected cash flow statement with the actual cash flow statement and necessary remedial measures can be taken. Moreover it provides a better measure for inter-period and inter-firm comparison.
- (vii) *Evaluate management decisions:* The statement of cash flows reports the companies' investing and financing activities and thus gives the investors and creditors about cash flow information for evaluating managers' decisions.

### Illustration 1

From the information as contained in the income statement and the balance sheet of Ashok Ltd., you are required to prepare a cash flow statement using (i) Direct Method and (ii) Indirect Method.

**A. Income Statement and Reconciliation of Earnings for the year ended 31.3.2011**

		₹
Net Sales		25,20,000
Less: Cost of sales	19,80,000	
Depreciation	60,000	
Salaries and wages	2,40,000	
Operating expenses	80,000	
Provision for taxation	<u>88,000</u>	<u>24,48,000</u>
Net operating profit		72,000
Non-recurring income:		
Profit on sale of equipment		<u>12,000</u>
		84,000
Retained earnings (balance in profit and loss account brought forward)		<u>1,51,800</u>
		2,35,800
Dividend declared and paid during the year		<u>72,000</u>
Profit and loss account balance as on 31.3.2011		<u>1,63,800</u>

**B. Comparative Balance Sheets**

	As at 31.3.2010	As at 31.3.2011
	₹	₹
Capital	3,60,000	4,44,000
Surplus in profit and loss A/c	1,51,800	1,63,800
Sundry creditors	2,40,000	2,34,000
Outstanding expenses	24,000	48,000
Income tax payable	12,000	13,200
Accumulated depreciation on building and equipments	<u>1,20,000</u>	<u>1,32,000</u>
	<u>9,07,800</u>	<u>10,35,000</u>
<b>Fixed assets</b>		
Land	48,000	96,000
Building and equipments	3,60,000	5,76,000
<b>Current assets</b>		
Cash	60,000	72,000
Debtors	1,68,000	1,86,000
Stock	2,64,000	96,000
Advances	<u>7,800</u>	<u>9,000</u>
	<u>9,07,800</u>	<u>10,35,000</u>

Cost of equipment sold was ₹72,000.

**Solution:****Direct Method****Ashok Limited****Cash Flow Statement for the year ended 31.3.2011**

	₹	₹
<i>Cash Flows from Operating Activities:</i>		
Cash receipts from customers	25,02,000	
Cash paid to suppliers and employees	<u>21,15,200</u>	
Cash generated from operations	3,86,800	
Income tax paid	<u>(86,800)</u>	
Net Cash from Operating Activities		3,00,000
<i>Cash Flows from Investing Activities:</i>		
Purchase of land	(48,000)	
Purchase of building and equipment	(2,88,000)	
Sale of equipment	<u>36,000</u>	
Net Cash used in Investing Activities		(3,00,000)
<i>Cash Flows from Financing Activities:</i>		
Issue of share capital	84,000	
Dividend paid	<u>(72,000)</u>	
Net Cash from Financing Activities		<u>12,000</u>
Net Increase in Cash and Cash Equivalents		12,000
Cash and Cash Equivalents at the beginning		<u>60,000</u>
Cash and Cash Equivalents at the end		<u>72,000</u>

**Working Notes:***(i) Cash receipts from customers:*

Sales revenue	25,20,000	₹
Add: Debtors at the beginning	<u>1,68,000</u>	
	26,88,000	
Less: Debtors at the end	<u>1,86,000</u>	
	<u>25,02,000</u>	

*(ii) Cash paid to suppliers and employees:*

Cost of goods sold	19,80,000	
Add: Operating expenses	80,000	
Salaries and wages	<u>2,40,000</u>	
	23,00,000	
Add: Creditors at the beginning	2,40,000	
Stock at the end	96,000	
Advances at the end	9,000	
Outstanding expenses at the beginning	<u>24,000</u>	
	<u>3,69,000</u>	
	26,69,000	

<i>Less:</i> Creditors at the end	2,34,000	
Stock at the beginning	2,64,000	
Advances at the beginning	7,800	
Outstanding expenses at the end	<u>48,000</u>	<u>5,53,800</u>
		<u>21,15,200</u>

*(iii) Income tax paid*

Tax payable at the beginning		12,000
<i>Add:</i> Provision for taxation		<u>88,000</u>
		1,00,000
<i>Less:</i> Tax payable at the end		<u>13,200</u>
Tax paid during the year		<u>86,800</u>

*(iv) Accumulated depreciation written off on equipments (sold)*

Accumulated depreciation at the beginning		1,20,000
<i>Add:</i> Depreciation for the year		<u>60,000</u>
		1,80,000
<i>Less:</i> Accumulated depreciation at the end		<u>1,32,000</u>
		<u>48,000</u>

*(v) Sale price of equipment*

Cost price		72,000
<i>Less:</i> Accumulated depreciation		<u>48,000</u>
		24,000
<i>Add:</i> Profit on sale		<u>12,000</u>
		<u>36,000</u>

*(vi) Purchase of building and equipments*

Balance at the beginning		3,60,000
<i>Less:</i> Cost of equipment sold		<u>72,000</u>
Balance		2,88,000
Balance at the end		<u>5,76,000</u>
Purchased during the year		<u>2,88,000</u>

**Indirect Method**

**Ashok Limited**  
**Cash flow statement for the year ended 31.3.2011**

	₹	₹
<i>Cash Flows from Operating Activities:</i>		
Net profit before taxation and extra-ordinary item	1,60,000	

Adjustments for:		
Depreciation	<u>60,000</u>	
Operating profit before working capital changes	2,20,000	
Increase in debtors	(18,000)	
Decrease in stock	1,68,000	
Increase in advances	(1,200)	
Decrease in creditors	(6,000)	
Increase in outstanding expenses	<u>24,000</u>	
Cash generated from operation	3,86,800	
Income tax paid	<u>(86,800)</u>	
Net Cash from Operating Activities		3,00,000
<i>Cash Flows from Investing Activities:</i>		
Purchase of land	(48,000)	
Purchase of building and equipments	(2,88,000)	
Sale of equipment	<u>36,000</u>	
Net Cash Used in Investing Activities		(3,00,000)
<i>Cash Flows from Financing Activities:</i>		
Issue of share capital	84,000	
Dividend paid	<u>(72,000)</u>	
Net Cash from Financing Activities		12,000
Net Increase in Cash and Cash Equivalents		12,000
Cash and Cash Equivalents at the beginning		<u>60,000</u>
Cash and Cash Equivalents at the end		<u>72,000</u>

### Illustration 2

From the following balance sheets of XYZ Ltd., for the year ended 31st March, 2010 and 2011, prepare a cash flow statement.

	31.3.2010	31.3.2011
	₹	₹
<i>Liabilities</i>		
Equity Share of ₹20 each	3,00,000	4,00,000
Share premium	—	10,000
Profit and loss appropriation A/c	1,00,000	1,00,000
Profit for the year	—	2,00,000
6% Debentures	1,50,000	1,00,000
Profit on Redemption of Debentures	—	2,000
Sundry creditors	1,40,000	1,10,000
Provision for taxation	50,000	1,00,000
Proposed dividend	15,000	20,000
	<u>7,55,000</u>	<u>10,42,000</u>

**Assets**

Property		2,00,000		2,50,000
Plant and machinery	4,00,000		4,50,000	
Less: Depreciation	<u>1,40,000</u>	2,60,000	<u>1,50,000</u>	3,00,000
Loans to subsidiary Co.		—		15,000
Share in subsidiary Co.		20,000		20,000
Stock in trade		1,40,000		1,50,000
Debtors		1,00,000		1,50,000
Bank		<u>35,000</u>		<u>1,57,000</u>
		<u>7,55,000</u>		<u>10,42,000</u>

**Additional information:**

During the year plant costing ₹50,000 was sold for ₹10,000. Accumulated depreciation on this plant was ₹30,000. Loss on sale of plant was charged to profit and loss account. Income-tax paid during the year was ₹60,000.

**Solution:**

**XYZ Limited**  
**Cash Flow Statement for the year ended 31.3.2011**

**Cash Flows from Operating Activities**

Net profit before tax and extraordinary items	₹ 2,00,000
Adjustments for:	
Depreciation	40,000
Provision for taxation	1,10,000
Proposed dividend	20,000
Loss on sale of machinery	<u>10,000</u>
Operating profit before working capital changes	3,80,000
Adjustments for:	
Increase in debtors	(50,000)
Increase in stock-in-trade	(10,000)
Decrease in creditors	<u>(30,000)</u>
Cash generated from operations	2,90,000
Tax paid	<u>(60,000)</u>
Net Cash from Operating Activities	<u>2,30,000</u>

**Cash Flows from Investing Activities**

Purchase of property	(50,000)
Sale of plant	10,000
Purchase of machinery	(1,00,000)
Loans to subsidiaries	<u>(15,000)</u>
Net Cash used in Investing activities	<u>(1,55,000)</u>

**Cash Flows from Financing Activities**

Issue of equity share capital at premium	1,10,000
Redemption of debentures	(48,000)
Dividends paid	<u>(15,000)</u>
Net Cash from Financing Activities	<u>47,000</u>

Net Increase in Cash and Cash Equivalents	
(₹2,30,000 – ₹1,55,000 + 47,000)	1,22,000
Cash and Cash Equivalents at the beginning of the year	<u>35,000</u>
Cash and Cash Equivalents at the end of the year	<u>1,57,000</u>

**Working Notes:****Property Account**

Dr.		Cr.	
	₹	₹	
To Balance b/d	2,00,000	By Balance c/d	2,50,000
To Bank (purchases)			
(balancing figure)	<u>50,000</u>		
	<u>2,50,000</u>		<u>2,50,000</u>

**Plant and Machinery Account**

	₹		₹
To Balance b/d	4,00,000	By Bank (plant sold)	10,000
To Bank (purchases)	1,00,000	By Accumulated depreciation	30,000
(balancing figure)		(on plant sold)	
		By Loss on plant sold	10,000
		By Balance c/d	<u>4,50,000</u>
	<u>5,00,000</u>		<u>5,00,000</u>

**Accumulated Depreciation Account**

	₹		₹
To Plant and machinery A/c	30,000	By Balance b/d	1,40,000
(on plant sold)		By Dep. for the year	40,000
To Balance c/d	<u>1,50,000</u>	(balancing figure)	
	<u>1,80,000</u>		<u>1,80,000</u>

**Loans to Subsidiary Account**

	₹		₹
To Bank (balancing figure)	<u>15,000</u>	By Balance c/d (closing)	<u>15,000</u>
	<u>15,000</u>		<u>15,000</u>

**Equity Share Capital Account**

		₹			₹
To Balance c/d	4,00,000		By Balance b/d	3,00,000	
			By Bank (balancing figure)	<u>1,00,000</u>	
	<u>4,00,000</u>			<u>4,00,000</u>	

**Share Premium Account**

		₹			₹
To Balance c/d	<u>10,000</u>		By Bank (balancing figure)	<u>10,000</u>	
	<u>10,000</u>			<u>10,000</u>	

**6% Debentures Account**

Dr.			Cr.	
		₹	₹	
To Bank (balancing figure)	48,000		By Balance b/d	1,50,000
To Profit on redemption A/c	2,000			
To Balance c/d	<u>1,00,000</u>			
	<u>1,50,000</u>			<u>1,50,000</u>

**Profit on Redemption Account**

		₹			₹
To Balance c/d	<u>2,000</u>		By 6% Debentures A/c	<u>2,000</u>	
	<u>2,000</u>			<u>2,000</u>	

**Provision for Taxation**

		₹			₹
To Bank (tax paid)	60,000		By Balance b/d	50,000	
To Balance c/d	<u>1,00,000</u>		By Transfer from P & L A/c	<u>1,10,000</u>	
	<u>1,60,000</u>			<u>1,60,000</u>	

**Proposed Dividend**

		₹			₹
To Bank (dividends paid)	15,000		By Balance b/d	15,000	
To Balance c/d	<u>20,000</u>		By Transfer from P & L A/c	<u>20,000</u>	
	<u>35,000</u>			<u>35,000</u>	

**Illustration 3**

From following balance sheet of Mahendra Ltd. prepare cash flow statement for the year ended 31.3.2011 by Indirect Method.

	31.3.2010	31.3.2011
	₹	₹
<i>Liabilities</i>		
Equity share capital	3,00,000	4,00,000
8% Preference shares	1,50,000	1,00,000
Capital reserve	-	20,000
General reserve	40,000	50,000
Profit and Loss account	30,000	48,000
Proposed dividend	42,000	50,000
Sundry creditors	25,000	47,000
Bills payable	20,000	16,000
Liability for expenses	30,000	36,000
Provision for taxation	<u>40,000</u>	<u>50,000</u>
	<u>6,77,000</u>	<u>8,17,000</u>
<i>Assets</i>		
Goodwill	1,00,000	80,000
Land and building	2,00,000	1,70,000
Plant	80,000	2,00,000
Investment	20,000	30,000
Sundry debtors	1,40,000	1,70,000
Stock	77,000	1,09,000
Bills receivable	20,000	30,000
Cash in hand	15,000	10,000
Cash at bank	10,000	8,000
Preliminary expenses	<u>15,000</u>	<u>10,000</u>
	<u>6,77,000</u>	<u>8,17,000</u>

## Additional informations:

- (i) A piece of land has been sold during the year and the profit on sale has been credited to capital reserve. Depreciation charged on building during the year is ₹5,000; no additions under this head during the year.
- (ii) A machine was sold for ₹10,000. The written down value of the machine was ₹12,000. Depreciation of ₹10,000 is charged on plant in 2010-11.
- (iii) Investments are trade investments. ₹3,000 by way of dividend is received including ₹1,000 from pre-acquisition profit which has been credited to investment account.
- (iv) An interim dividend of ₹20,000 has been paid in 2010-11.

**Solution:**

**Mahendra Limited**  
**Cash Flow Statement for the year ended 31.3.2011**

*Cash Flows from Operating Activities:*

	₹
Net profit before tax and extraordinary items	1,08,000
Adjustments for:	
Depreciation:	
Building	5,000
Plant & Machinery	<u>10,000</u>
Preliminary expenses	5,000
Loss on sale of plant	2,000
Goodwill written off	20,000
Dividend received	<u>(2,000)</u>
Operating profit before working capital changes	1,48,000
Adjustments for:	
Increase in debtors	(30,000)
Increase in stock	(32,000)
Increase in bills receivable	(10,000)
Decrease in bills payable	(4,000)
Increase in sundry creditors	22,000
Increase in liability for expenses	<u>6,000</u>
Net Cash from Operating Activities	<u>1,00,000</u>
<i>Cash Flows from Investing Activities:</i>	
Sale of proceeds of land	45,000
Sale proceeds of machine	10,000
Purchase of plant	(1,42,000)
Purchase of investment	(11,000)
Dividend received	<u>3,000</u>
Net Cash Used in Investing Activities	<u>(95,000)</u>
<i>Cash Flows from Financing Activities:</i>	
Issue of share capital	1,00,000
Redemption of preference shares	(50,000)
Interim dividend paid	(20,000)
Dividend paid (assumed)	<u>(42,000)</u>
Net Cash Used in Financing Activities	<u>(12,000)</u>
Net Increase in Cash and Cash Equivalents	(7,000)
Cash and Cash Equivalents on 31.3.2010 (Opening balance)	<u>25,000</u>
Cash and Cash Equivalents on 31.3.2011 (Closing balance)	<u>18,000</u>

**Working Notes:****(i) Net profit before tax and extra-ordinary items:**

Profit and Loss Account as on 31.3.2011		48,000
Less: Profit and loss account as on 31.3.2010		<u>30,000</u>
Profit earned during the year after appropriation and provision for tax		18,000
Add: Transfer to general reserve	10,000	
Proposed dividend	50,000	
Interim dividend	20,000	
Provision for taxation	<u>10,000</u>	<u>90,000</u>
Profit before tax and extraordinary items		<u>1,08,000</u>

**(ii) Land and Building Account**

		₹			₹
To Balance b/d	2,00,000		By Depreciation A/c		5,000
To Capital reserve	20,000		By Bank (purchases)		
			(balancing figure)		45,000
			By Balance c/d		<u>1,70,000</u>
	<u>2,20,000</u>				<u>2,20,000</u>

**(iii) Plant and Machinery Account**

		₹			₹
To Balance b/d	80,000		By Bank (sales)		10,000
To Bank (purchases)	1,42,000		By Profit & Loss Account (loss)		2,000
			By Depreciation		10,000
			By Balance c/d		<u>2,00,000</u>
	<u>2,22,000</u>				<u>2,22,000</u>

**(iv) Investment Account**

		₹			₹
To Balance b/d	20,000		By Dividend		1,000
To Bank (purchases)	<u>11,000</u>		By Balance c/d		<u>30,000</u>
	<u>31,000</u>				<u>31,000</u>

**Illustration 4**

Blue Star Ltd. presents to you the following balance sheets and profit and loss account.

**Blue Star Limited  
Balance Sheet as at**

<i>Liabilities</i>	<i>31.3.2010</i>	<i>31.3.2011</i>
	₹	₹
Equity share capital	25,00,000	25,00,000
Profit and loss account	20,75,000	23,65,000
14% Debentures	15,00,000	12,50,000
Sundry creditors	2,56,250	3,04,250
Expenses outstanding	54,500	68,500
Provision for bad debts	20,000	22,500
	<u>64,05,750</u>	<u>65,10,250</u>
<i>Assets</i>	<i>31.3.2010</i>	<i>31.3.2011</i>
	₹	₹
Fixed assets	60,00,000	65,00,000
Less: Provision for depreciation	<u>20,00,000</u>	<u>24,50,000</u>
	40,00,000	40,50,000
Investments	6,25,000	2,50,000
Stock	10,33,250	12,67,750
Sundry debtors	4,00,000	4,50,000
Cash at bank	3,35,500	4,83,500
Preliminary expenses	12,000	9,000
	<u>64,05,750</u>	<u>65,10,250</u>

**Blue Star Ltd.  
Profit and Loss Account for the year ended 31.3.2011**

<i>Dr.</i>		<i>Cr.</i>	
	₹	₹	
To Opening stock	10,33,250	By Sales	91,00,500
To Purchases	48,84,500	By Closing stock	12,67,750
To Gross profit	<u>44,50,500</u>		
	<u>1,03,68,250</u>		<u>1,03,68,250</u>
To Operating expenses	19,58,750	By Gross profit	44,50,500
To Provision for bad debts	2,500	By Law suit compensation	1,25,000
To Provision for depreciation	4,50,000	By Interest on investments	65,000
To Preliminary expenses - written off	3,000	By Profit on sale of investments	18,750

To Interest on debenture	1,92,500	
To Income tax paid	8,21,000	
To Net profit	<u>12,31,500</u>	
	<u>46,59,250</u>	<u>46,59,250</u>

You are required to prepare cash flow statement for the year ended 31.3.2011 using (i) Direct Method and (ii) Indirect Method.

**Solution:**

**Direct Method**

**Blue Star Limited**  
**Cash Flow Statement for the year ended 31.3.2011**

	₹
<i>Cash Flows from Operating Activities:</i>	
Cash receipts from customers	90,50,500
Cash paid to suppliers	(48,36,500)
Cash paid to employees and others	(19,44,750)
Cash inflow from operations	22,69,250
Income tax paid	(8,21,000)
Cash flow before extraordinary item	14,48,250
Compensation received in law suit	<u>1,25,000</u>
Net Cash from Operating Activities	<u>15,73,250</u>
<i>Cash Flow from Investing Activities</i>	
Fixed assets purchased	(5,00,000)
Sale proceeds of Investments	3,93,750
Interest on Investments	<u>65,000</u>
Net Cash Used in Investing Activities	<u>(41,250)</u>
<i>Cash Flows from Financing Activities:</i>	
Redemption of debentures	(2,50,000)
Debenture interest paid	(1,92,500)
Dividend paid	<u>(9,41,500)</u>
Net Cash Used in Financing Activities	<u>(13,84,000)</u>
Net Increase in Cash and Cash Equivalents	1,48,000
Cash and Cash Equivalents on 31.3.2010 (opening balance)	<u>3,35,500</u>
Cash and Cash Equivalents on 31.3.2011 (closing balance)	<u>4,83,500</u>

**Working Notes:**

(i) Calculation of cash receipts from customers:

	₹
Sales	91,00,500
Add: Sundry debtors on 31.3.2010	<u>4,00,000</u>

	95,00,500
Less: Sundry debtors on 31.3.2011	<u>4,50,000</u>
	<u>90,50,500</u>
<i>(ii) Cash paid to suppliers:</i>	
Purchases	48,84,500
Add: Sundry creditors as on 31.3.2010	<u>2,56,250</u>
	51,40,750
Less: Sundry creditors as on 31.3.2011	<u>3,04,250</u>
	<u>48,36,500</u>
<i>(iii) Cash paid to employees and others:</i>	
Sundry operating expenses	19,58,750
Add: Expenses outstanding as on 31.3.2010	<u>54,500</u>
	20,13,250
Less: Expenses outstanding as on 31.3.2011	<u>68,500</u>
	<u>19,44,750</u>
<i>(iv) Fixed assets purchased during the year:</i>	
Fixed assets at cost on 31.3.2011	65,00,000
Less: Fixed assets at cost on 31.3.2010	<u>60,00,000</u>
	<u>5,00,000</u>
<i>(v) Sale proceeds of investments:</i>	
Cost of investments sold (₹6,25,000 – 2,50,000)	3,75,000
Add: Profit on sale of investments	<u>18,750</u>
	<u>3,93,750</u>
	₹
<i>(v) Dividend paid during the year:</i>	
Profit and loss account balance as on 31.3.2010	20,75,000
Add: Net profit for the year	<u>12,31,500</u>
	33,06,500
Less: Profit and loss account balance as on 31.3.2011	<u>23,65,000</u>
Dividend paid	<u>9,41,500</u>

**Indirect Method**

**Blue Star Limited**  
**Cash Flow Statement for the year ended 31.3.2011**

₹	
<i>Cash Flows from Operating Activities:</i>	
Net profit before income tax and extra-ordinary item	19,27,500
Adjustments for:	
Depreciation	4,50,000

Provision for bad debts	2,500
Preliminary expenses written off	3,000
Profit on sale of investments	(18,750)
Interest on investments	(65,000)
Interest on debentures	<u>1,92,500</u>
Operating profit before working capital changes	24,91,750
<i>Adjustments for:</i>	
Increase in stock	(2,34,500)
Increase in sundry debtors	(50,000)
Increase in sundry creditors	48,000
Increase in expenses outstanding	<u>14,000</u>
Cash inflow from operations	22,69,250
Income tax paid	<u>(8,21,000)</u>
Cash flow before extra-ordinary items	14,48,250
Compensation received in law suit	<u>1,25,000</u>
Net Cash Flow from Operating Activities	<u>15,73,250</u>
<i>Cash Flows from Investing Activities:</i>	
Fixed assets purchased	(5,00,000)
Sale proceeds of investments	3,93,750
Interest on investments	<u>65,000</u>
Net Cash Used in Investing Activities	<u>(41,250)</u>
<i>Cash Flows from Financing Activities:</i>	
Redemption of debentures	(2,50,000)
Debenture interest paid	(1,92,500)
Dividend paid	<u>(9,41,500)</u>
Net Cash Used in Financing Activities	<u>(13,84,000)</u>
	₹
Net Increase in Cash and Cash Equivalents	1,48,000
Cash and Cash Equivalent on 31.3.2010 (opening balance)	<u>3,35,500</u>
Cash and Cash Equivalent on 31.3.2011 (closing balance)	<u>4,83,500</u>

**Working Notes:**

	₹
Net profit before income tax and extraordinary item:	
Net profit as per profit and loss account	12,31,500
Add: Income tax paid	<u>8,21,000</u>
	20,52,500
Less: Compensation received on law suit	<u>1,25,000</u>
	<u>19,27,500</u>

**Illustration 5:**

The following are the summary of cash transactions extracted from the books of Happy Ltd.:

	(₹ in '000)
Balance as on 1st April, 2010	140
Receipts from customers	11,132
Issue of shares	1,200
Sale of fixed assets	<u>512</u>
	<u>12,984</u>
Payments to suppliers	8,188
Payments for fixed assets	920
Payments for overheads	460
Wages and salaries	276
Taxation	972
Dividends	320
Repayment of bank loans	<u>1,000</u>
	<u>12,136</u>
Balance as on 31st March, 2011	848

You are required to prepare a cash flow statement of the company for the period ended 31st March, 2011 in accordance with the Accounting Standard- 3 (Revised).

**Solution:**

**In the books of Happy Limited**  
**Cash Flow Statement for the period ending 31<sup>st</sup> March, 2011**

	(₹ In '000s)
<b>A. Cash Flow from Operating Activities</b>	
Receipts from customers	11,132
Payment to suppliers	(8,188)
Payment of Wages and Salaries	(276)
Payment of Overheads	(460)
Payment of Taxes	<u>(972)</u>
Net Cash from Operating Activities(A)	<u>1236</u>
<b>B Cash Flow from Investing Activities</b>	
Proceeds on sale of fixed assets	512
Acquisition of (payments) fixed assets	<u>(920)</u>
Net Cash Used in Investing Activities (B)	<u>(408)</u>
<b>C Cash Flow from Financing Activities</b>	
Proceeds on issue of shares	1200
Payments of dividends	(320)
Repayments of bank loans	<u>(1000)</u>
Net Cash Used in Investing Activities (C)	<u>(120)</u>
Net increase in cash and cash equivalents (A)+(B)+(C)	708
Cash and cash equivalents at the beginning of the period	<u>140</u>
Cash and cash equivalents at the end of the period	<u>848</u>

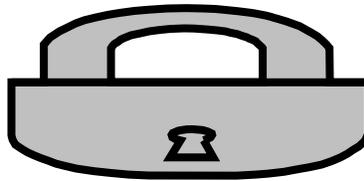
### LESSON ROUND UP



- Cash flow statement reports cash receipts and payments classified according to the entities' major activities i.e. operating, investing and financing activities during the period.
- Cash flow statement is prepared in line with the stipulations given in Accounting Standard (AS) -3 (Revised).
- Cash comprises cash on hand and demand deposits with banks. Cash equivalents are short term, highly liquid investments that can be readily convertible into cash.
- Cash flows are inflows and outflows of cash and cash equivalents.
- The cash flow statement during a period is classified into three main categories of cash inflows and cash outflows i.e. operating, investing and financing activities.
- Special attention or treatment is required for items such as, foreign currency cash flows, extra-ordinary items such as bad debts recovered, claims from insurance companies, winning of a law suit or lottery etc, interest and dividends, taxes on income, acquisition and disposals of subsidiaries and other business units, non-cash transactions etc.
- Cash flow statement is prepared with help of - balance sheets at the beginning and at the end of the accounting period, profit and loss account of the current period and additional data collected.
- Following procedure may be used for the preparation of a cash flow statement:
  - Calculation of net increase (decrease) in cash and cash equivalents accounts
  - Calculation of the net cash provided (used) by operating activities
  - Calculation of the net cash provided (used) by investing and financing activities.
- The net cash flow provided by (used) in each of the three activities may be highlighted
- Ensure that the aggregate of net cash flows from operating, investing and financing activities is equal to net increase (decrease) in cash and cash equivalents
- Direct and indirect methods are used for converting net profit into net cash flows from operating activities.
- Under direct method, cash receipts from operating revenues and cash payments for operating expenses are arranged and presented in the cash flow statement and the difference between cash receipts and cash payments is treated as the net cash flow from operating activities.
- In indirect method, the net profit (loss) is used as the base and convert it to net cash provided by (used in) operating activities.

- The usefulness of cash flow statement are to:
- Predict future cash flows
- Determine the ability to pay dividends and other commitments
- Show the relationship of net income to changes in the business cash
- Analyse efficiency in cash management and disclose the movement cash
- Disclose success or failure of cash planning

### SELF TEST QUESTIONS



1. (a) What is a cash-flow statement?  
(b) How does it differ from a cash budget and a funds-flow statement?
2. Discuss the classification of cash flow statement.
3. (a) Explain the importance of cash-flow analysis.  
(b) Explain briefly the steps to be followed in preparing a cash-flow statement.
4. Explain how interest and dividend are treated in cash flow statement.
5. By taking hypothetical figures prepare a cash-flow statement for the period ending 30th June, 2011, for a manufacturing company.
6. From the following information prepare a cash flow statement for the year ended 31st March, 2011:
  - (i) Increase in working capital — ₹40,000
  - (ii) Depreciation provided on fixed assets — ₹17,500
  - (iii) Dividend paid — ₹35,000
  - (iv) Net profit — ₹1,07,500 before writing off goodwill
  - (v) Goodwill written off out of profit — ₹50,000
  - (vi) Machinery purchased — ₹100,000
  - (vii) Further issue of share capital ₹50,000 for cash.
7. From the following information you are required to prepare cash flow statement of XYZ Ltd., for the year ended 31st March, 2011:

(₹ In 000)

<i>Liabilities</i>	31.3.2010	31.3.2011	<i>Assets</i>	31.3.2010	31.3.2011
	₹	₹		₹	₹
Share capital	70,000	74,000	Bank balance	9,000	7,800
Bonds	12,000	6,000	Accounts receivable	14,900	17,700
Accounts payable	10,360	11,840	Inventories	49,200	42,700
Provision for doubtful debts	700	800	Land	20,000	30,000
			Goodwill	10,000	5,000
Reserves and Surplus	<u>10,040</u>	<u>10,560</u>			
	<u>1,03,100</u>	<u>1,03,200</u>		<u>1,03,100</u>	<u>1,03,200</u>

Following additional information has also been supplied to you:

(i) Dividends of ₹3,500 thousand were paid during the year 2010-11.

8. The balance sheets of Narula Ltd. as at the end of March 2010 and 2011 were given below:

	31.3.2010	31.3.2011
	₹	₹
<i>Liabilities</i>		
Share capital	1,00,000	1,50,000
Share premium	—	5,000
General reserve	50,000	60,000
Profit & Loss A/c	10,000	17,000
8% Debentures	70,000	50,000
Depreciation reserve:		
Plant	50,000	56,000
Furniture	5,000	6,000
Provision of tax	20,000	30,000
Sundry creditors	86,000	95,000
Reserve for bad debts	<u>2,000</u>	<u>5,000</u>
	<u>3,93,000</u>	<u>4,74,000</u>
<i>Assets</i>		
Freehold land	1,00,000	1,00,000
Plant at cost	1,04,000	1,00,000
Furniture at cost	7,000	9,000
Investment at cost	60,000	80,000
Debtors	32,000	75,000
Stock	60,000	65,000
Cash	<u>30,000</u>	<u>45,000</u>
	<u>3,93,000</u>	<u>4,74,000</u>

A plant purchased for ₹4,000 (Depreciation ₹2,000) was sold for ₹800 on 31st December, 2010. On October 2010 an item of furniture was purchased for ₹2,000. Depreciation on plant was provided at 8 per cent on cost (excluding sold out item) and on furniture at 12.5 per cent on average cost. A dividend of 22.5 per cent on original shares was paid.

Prepare a cash flow statement for 2010-11.

9. The financial position of XYZ Ltd. on 1st April, 2010 and 31st March, 2011 was as follows:

	1.4.2010		31.3.2011
	₹		₹
<b>Liabilities</b>			
Current liabilities	72,000		82,000
Loan from associate company	—		40,000
Loan from bank	60,000		50,000
Capital and reserve	<u>2,96,000</u>		<u>2,98,000</u>
	<u>4,28,000</u>		<u>4,70,000</u>
<b>Assets</b>			
Cash	8,000		7,200
Debtors	70,000		76,800
Stock	50,000		44,000
Land	40,000		60,000
Buildings	1,00,000		1,10,000
Machinery cost	2,14,000	2,44,000	
Less: Prov. for depreciation	<u>54,000</u>	<u>1,60,000</u>	<u>72,000</u>
	<u>4,28,000</u>		<u>4,70,000</u>

During the year ₹52,000 were paid as dividends.

You are required to prepare cash flow statements for the year ended 31.3.2011.

10. The following balance sheets have been prepared from the books of Taj Limited as appearing on 31.3.2010 and 31.3.2011.

	31.3.2010		31.3.2011
	₹		₹
<b>Liabilities</b>			
Equity capital	4,00,000		6,00,000
Share premium	1,00,000		1,10,000
General reserve	2,00,000		2,20,000

Debenture redemption reserve	1,00,000	1,10,000
Debentures	3,00,000	2,90,000
Taxation provision	40,000	35,000
Secured loan (short term)	2,00,000	1,00,000
Current liabilities	<u>24,000</u>	<u>30,000</u>
	<u>13,64,000</u>	<u>14,95,000</u>
 <i>Assets</i>		
Buildings	5,70,000	5,00,000
Plant and machinery	3,60,000	3,51,000
Furniture	90,000	81,000
Cash in hand	5,000	8,000
Stock	1,55,000	1,25,000
Debtors	1,80,000	1,80,000
Investments (short term)	—	2,10,000
Bills receivable	<u>4,000</u>	<u>40,000</u>
	<u>13,64,000</u>	<u>14,95,000</u>

- (i) During 2010-11, the company paid 12% dividend on its equity share capital of ₹4,00,000.
- (ii) The shares are of ₹10 each fully paid.
- (iii) Taxation provision of 2009-10 was utilised to the extent of ₹30,000 for income tax paid in 2010-11.
- (iv) Depreciation was charged on building at 5%; on plant and machinery at 10% and on furniture at 10% for a full one year.
- (v) A building worth ₹70,000 was sold on 1.4.2010 at ₹60,000 and a new building was constructed at a value of ₹25,000 on 31.3.2011.
- (vi) A machine was purchased at a cost of ₹40,000 on 1.4.2010 while a machine having a book value of ₹10,000 was sold on 1.10.2010 at ₹20,000.

Prepare a cash flow statement for the year ended 31.3.2011.

11. From the following particulars, prepare a cash flow statement:

- (i) Net profit for the year 2010-11 after giving effect to the following was ₹67,000.
- (ii) Plant sold during the year for ₹1,23,000, cost being ₹2,00,000, provision for depreciation being ₹50,000.
- (iii) A part of old premises was disposed off for ₹49,000, its cost was ₹13,000 and depreciation provided was ₹8,000.
- (iv) Remaining part of the premises was renovated at a cost of ₹52,000, its

cost earlier being ₹98,000 and depreciation provided being ₹16,000.

- (v) No depreciation was provided during the year on items (ii), (iii) and (iv).
  - (vi) 12% Preference shares of ₹3,00,000 were redeemed at a premium of 10%.
  - (vii) 15% Debentures of ₹2,00,000 were issued at a discount of 5%.
  - (viii) 10,000 Equity shares of ₹100 each were converted into 1,00,000 equity shares of ₹10 each.
  - (ix) A plant costing ₹10,000 was exchanged for furniture of the same value.
  - (x) Cash at bank as at the beginning was ₹40,000 and at the end ₹1,10,000.
12. The following information is available from the books of Exclusive Ltd. For the year ended 31<sup>st</sup> March 2011:
- (i) Cash sales for the year were ₹10,00,000 and sales on account ₹12,00,000
  - (ii) Payments on accounts payable for inventory totaled ₹7,80,000
  - (iii) Collection against accounts receivable were ₹7,60,000
  - (iv) Rent paid in cash ₹2,20,000, outstanding rent being ₹20,000
  - (v) 4,00,000 equity shares of ₹10 par value were issued for ₹48,00,000
  - (vi) Equipment was purchased for cash ₹16,80,000
  - (vii) Dividend amounting to ₹10,00,000 was declared but yet to be paid.
  - (viii) ₹4,00,000 of dividends declared in the previous year were paid.
  - (ix) Equipment having a book value of ₹1,60,000 was sold for ₹2,40,000
  - (x) The cash account was increased by ₹37,20,000
- Prepare a cash flow statement using direct method.
-

EXECUTIVE PROGRAMME  
COMPANY ACCOUNTS  
COST AND MANAGEMENT ACCOUNTING

# EP-CA&CMA/2011

## TEST PAPERS

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This Test Paper set contains five test papers. Test Papers 1/2011, 2/2011, 3/2011, 4/2011 and 5/2011. The maximum time allowed to attempt each test paper is 3 hours.

Students are advised to attempt atleast **one Test Paper from Test Papers 3/2011, 4/2011 and 5/2011 i.e. either Test Paper 3/2011 or Test Paper 4/2011 or Test Paper 5/2011** and send the response sheet for evaluation to make him/her eligible for Coaching Completion Certificate. However, students may, if they so desire, are encouraged to send more response sheets including Test Paper 1/2011 and 2/2011 for evaluation.

While writing answers, students should take care not to copy from the study material, text books or other publications. Instances of deliberate copying from any source will be viewed very seriously.

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### **WARNING**

It is brought to the notice of all the students pursuing Company Secretaryship Course that they should follow strict discipline while writing response sheets to various Test Papers appended at the end of this Study Material. Any attempt of unfair means by students in completing the postal coaching by way of submitting response sheets in different handwritings or by way of copying from the study material/suggested answers supplied by the Institute or from the answers of the students who have already completed the course successfully, etc., will be viewed seriously by the Institute. Students are, therefore, advised to write their response sheets in their own handwriting without copying from any original source.

Students may note that use of any malpractice while undergoing postal or oral coaching is a misconduct as per certain provisions of Company Secretaries Regulations and accordingly the registration of such students is liable to be cancelled or terminated.

EXECUTIVE PROGRAMME  
**COMPANY ACCOUNTS**  
**COST AND MANAGEMENT ACCOUNTING**

**TEST PAPER 1/2011**  
(OPTIONAL)

**(Based on Study Lessons 1 to 7)**

*Time allowed: 3 hours*

*Maximum marks : 100*

**NOTE:** Answer all questions.

1. Answer the following:

- (i) Write in brief about objectives and functions of Accounting Standards Board.
- (ii) What do you mean by securities premium account? How it can be utilized as per section 78 of the Companies Act, 1956?
- (iii) From the following particulars of RVJ Ltd. calculate the managerial remuneration in the following cases:
  - (a) There is only one whole-time director.
  - (b) There are two whole time directors.
  - (c) There are two whole time directors, a part time director and a Manager.

₹

Net profit before provision for income-tax and managerial remuneration, but after depreciation and provision for repairs	85,00,000
Depreciation provided in the books	30,00,000
Provision for repairs of machinery during the year	2,50,000
Depreciation allowable under Schedule XIV	24,00,000
Actual expenditure incurred on repairs during the year	1,50,000

- (iv) State the legal requirements relating to transfer of profits to reserves before declaration and payment of dividends by joint stock companies.
- (v) Is internally generated goodwill recognized as an asset? Discuss the criteria for recognition of internally generated intangible asset.

*(5 marks each)*

2. (i) Following balances appeared in the books of AVON Ltd. on 1<sup>st</sup> April 2011:

₹

12% Debentures Account	8,00,000
12% Sinking Fund Account	6,00,000
12% Sinking Fund Investment Account (Face value ₹7,20,000)	6,00,000

Annual contributions of ₹128,000 to sinking fund is to be made on 31<sup>st</sup> March

every year. On 31<sup>st</sup> March 2011 balance at bank was ₹400,000 after receipt of interest. The company sold the investments at 80% and debentures were redeemed. You are required to prepare 12% Debentures Account, 12% Sinking Fund Account, 12% Sinking Fund Investment Account and Bank Account.

(ii) Write a note on writing off discount on issue of debentures. (3 marks)

(iii) Discuss in brief various methods used for share valuation. (3 marks)

3. Write short notes on the following:

(i) Over subscription of shares

(ii) Related party disclosures as per Accounting Standard-18.

(iii) Minority interest. (5 marks each)

4. (i) Distinguish between any two:

(a) Forfeiture and surrender of shares.

(b) Underwriters and Brokers

(c) Marked and Unmarked Applications (5 marks each)

(ii) Krish Company, incorporated on 1st July, 2010, took over a running business from 1st April, 2010. The company prepares its first final accounts on 31st March, 2011. From the following information, you are required to calculate the sales ratio of pre-incorporation and post-incorporation periods.

(a) Sales for April 2010 to March, 2011— ₹19,20,000;

(b) The sales for the month of April—twice of the average sales; for the month of May equal to average sales; sales for four months August to November—1/4 of the average of each month; and sales for January and February—three times the average sales. (5 marks)

5. (i) What do you mean by minority interest? How is it calculated? (5 marks)

(ii) Hewit Ltd. acquired as investment 30,000 shares in Sewit Ltd. for ₹3,10,000 on 1<sup>st</sup> July, 2010. The balance sheets of the two companies on 31<sup>st</sup> March, 2011 were as follows:

	<i>Hewit Ltd.</i>	<i>Sewit Ltd.</i>
	₹	₹
<i>Liabilities</i>		
Equity shares of ₹ 10 each		
fully paid-up	18,00,000	5,00,000
General reserve	3,20,000	80,000
Profit and loss account	1,60,000	50,000
Bills payable	80,000	40,000
Creditors	<u>1,00,000</u>	<u>60,000</u>
	<u>24,60,000</u>	<u>7,30,000</u>
<i>Assets</i>		
Machinery	14,00,000	3,00,000
Furniture	2,00,000	1,40,000

Investment	3,10,000	—
Stock	2,00,000	1,00,000
Debtors	1,20,000	70,000
Cash at bank	1,80,000	80,000
Bills receivable	<u>50,000</u>	<u>40,000</u>
	<u>24,60,000</u>	<u>7,30,000</u>

Following additional information is provided to you:

- General reserve appearing in the balance sheet of Sewit Ltd. has remained unchanged since 31<sup>st</sup> March, 2010.
- Profit earned by Sewit Ltd. for the year ended 31<sup>st</sup> March, 2011 amounted to ₹ 40,000.
- On 1<sup>st</sup> February, 2011, Hewit Ltd. sold to Sewit Ltd. goods costing ₹ 16,000 for ₹ 20,000, 25% of these goods remained unsold with Sewit Ltd. on 31<sup>st</sup> March, 2011. Creditors of Sewit Ltd. include ₹ 8,000 due to Hewit Ltd. on account of these goods.
- Out of Sewit Ltd.'s acceptances, ₹30,000 are those which were accepted in favour of Hewit Ltd. Out of these Hewit Ltd had endorsed by 31<sup>st</sup> March 2011, ₹ 16,000 worth of Bills in favor of its creditors.

You are required to draw a consolidated balance sheet as at 31<sup>st</sup> March, 2011. (10 marks)

6. Dreamland Ltd., registered with a capital of ₹ 20,00,000 in equity shares of ₹ 10 each acquired the business of M/s Disney, the Balance Sheet of whom at the date of acquisition was as follows:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
Bills Payable	32,000	Cash at Bank	58,000
Sundry Creditors	60,000	Bills Receivable	26,000
Reserve	28,000	Sundry Debtors	96,000
Capital Accounts:		Stock	36,000
A - 140,000		Furniture and Fixtures	4,000
B - <u>140,000</u>	2,80,000	Plant and Machinery	80,000
		Land and Buildings	<u>100,000</u>
	<u>4,00,000</u>		<u>4,00,000</u>

The assets and liabilities were subject to the following revaluation:

- Plant and Machinery to be depreciated by 10%
- Furniture and Fittings to be depreciated by 15%
- Land and Buildings to be appreciated by 20%
- A provision to be made for bad debts on debtors @ 2½%
- Goodwill of the firm was valued at ₹ 48,000.

The consideration was to be discharged as follows:

- ◆ Allotment of 20,000 Equity Shares of ₹ 10 each at ₹12 each.
- ◆ Allotment of 1000, 14% Debentures of ₹ 100 each at a discount of 10%.
- ◆ Balance in cash.

The cost of acquisition of the company amounted to ₹10,000.

You are required to show the journal entries in the books of the company and prepare the opening balance sheet of the company after the acquisition.

*(15 marks)*

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**TEST PAPER 2/2011**  
**(Based on Study Lessons 8 to 16)**

*Time allowed: 3 hours*

*Maximum marks: 100*

**NOTE:** Answer all questions.

1. Answer the following:

(i) Explain the scope and limitations of management accounting. (5 marks)

(ii) The following data is available for a company:

	₹
Selling price	20 per unit
Variable manufacturing costs	11 per unit
Variable selling costs	3 per unit
Fixed factory overheads	5,40,000 per year
Fixed selling costs	2,52,000 per year

You are required to compute:

- (a) Break-even point expressed in amount of sales in rupees;
- (b) Number of units that must be sold to earn a profit of ₹60,000 per year;
- (c) How many units must be sold to earn a net income of 10% of sales?

(5 marks)

(iii) What is inventory control? Explain various objectives of inventory control. (5 marks)

(iv) Prepare a contract account for the year ending 31<sup>st</sup> March 2011 from the following particulars of the M/s Abacus Constructions. The contract is for erecting a sewer plant for a total value of ₹ 24 lakhs. Contract is 100% complete.

<i>Particulars</i>	₹
Wages	6,00,000
Special Plants	2,00,000
Materials	3,00,000
Overheads	1,20,000
Materials lying on site	40,000
Depreciation to be charged on plant	10%
Work certified	16,00,000
Amount received in cash of certified work	80%

5% of the value of materials issued and 6% of wages may be taken to have incurred for the portion of work completed but not yet certified. Overheads are charged as a percentage of direct wages. Ascertain the amount to be transferred to profit and loss account on the basis of realized profit.

(10 marks)

2. (i) What are the methods of distribution of service department overheads to production departments? *(5 marks)*

- (ii) A Chinese soft drink company is planning to establish a subsidiary company in India to produce mineral water. Based on the estimated annual sales of 40,000 bottles of the mineral water, cost studies produced the following estimates for the Indian subsidiary:

	Total Annual Costs	Percent of Total Annual Cost which is variable
Material	2,10,000	100%
Labour	1,50,000	80%
Factory Overheads	92,000	60%
Administration Expenses	40,000	35%

The Indian production will be sold by manufacturer's representatives who will receive a commission of 8% of the selling price. No portion of the Japanese office expenses is to be allocated to the Indian subsidiary.

You are required to:

- ◆ Compute the selling price per bottle to enable the management to realize an estimated 10% profit on sale proceeds in India.
- ◆ Calculate the break-even point in Rupee sales as also in number of bottles for the Indian subsidiary on the assumption that the selling price is ₹14 per bottle. *(10 marks)*

3. Differentiate between the following:

- (a) Traditional Budgeting and Zero Based Budgeting
- (b) Absorption costing and marginal costing
- (c) Opportunity cost and imputed cost. *(5 marks each)*

4. Working Capital of GAMA Ltd., is ₹1,35,000 and Current Ratio is 2.5, Liquid ratio is 1.5 and the proprietary ratio 0.75. Bank Overdraft is ₹30,000. There are no long-term loans and fictitious assets. Reserve and surplus amount to ₹90,000 and the gearing ratio (Equity Capital/Preference Capital) is 2.

You are required to:

From the above ascertain current assets, current liabilities, net block, proprietary fund, quick liabilities, quick assets, stock, preference and equity capital.

Also draw the statement of proprietary fund. *(15 marks)*

5. The following figures have been extracted from the Books of Alpha Ltd., for the year ended 31<sup>st</sup> March, 2011. You are required to prepare a cash flow statement.

- (i) Net profit before taking into account Income Tax and Income from law suits but after taking into account the following items was ₹20 lakhs;
  - (a) Depreciation on Fixed Assets ₹5 lakhs
  - (b) Discount on issue of Debentures written off ₹30,000.
  - (c) Interest on Debentures paid ₹3,50,000.
  - (d) Book value of investments ₹ 3 lakhs (Sale of Investments for ₹3,20,000).

- (e) Interest received on investments ₹60,000.
- (f) Compensation received ₹90,000 by the company in a suit filed.
- (ii) Income tax paid during the year ₹10,50,000.
- (iii) 15,000, 10% preference shares of ₹100 each were redeemed on 31<sup>st</sup> March, 2011 at a premium of 5%. Further the company issued 50,000 equity shares of ₹10 each at a premium of 20% on 2.4.2011. Dividend on preference shares were paid at the time of redemption.
- (iv) Dividends paid for the year 2009-10, ₹ 5 lakhs and Interim dividend paid ₹3 lakhs for the year 2010-11.
- (v) Land was purchased on 2.4.2011 for ₹2,40,000 for which the company issued 20,000 equity shares of ₹10 each at a premium of 20% to the land owner as consideration.
- (vi) Current assets and Current Liabilities in the beginning and at the end of the years were as detailed below:

	31.3.2010 ₹	31.3.2011 ₹
Stock	12,00,000	13,18,000
Sundry Debtors	2,08,000	2,13,100
Cash in hand	1,96,000	35,300
Bills receivabl	50,000	40,000
Bills payable	45,000	40,000
Sundry Creditors	1,66,000	1,71,300
Outstanding expenses	75,000	81,800

(15 marks)

6. (i) What are the requirements for successful implementation of budgetary control system.? (5 marks)
- (ii) A Factory is currently working at 50% capacity and produces 20,000 units of product P, the unit cost of which is ₹180 comprised as follows:
- |                         |                |
|-------------------------|----------------|
| Direct Material         | 200            |
| Direct Labour           | 60             |
| Factory Overhead        | 60 (40% fixed) |
| Administrative Overhead | 40 (50% fixed) |

The selling price per unit is ₹400.

If the capacity is increased to 60%, the raw material cost will increase by 4% and selling price falls by 4%. At 80% capacity, raw material cost increases by 10% and selling price falls by 10%.

You are required to:

Work out the total costs and profit for the three capacity levels and prepare a brief note for the management on the profitability of these levels of performance with your recommendation. (10 marks)

**TEST PAPER 3/2011**  
**(Based on all Study Lessons)**

*Time allowed: 3 hours*

*Maximum marks: 100*

**PART A**

*(Answer Question No. 1 which is compulsory and  
any two from the rest of this part)*

1. (i) State with reasons in brief, whether the following statements are *true or false*:
- (a) Premium payable on redemption of preference shares must be debited to securities premium account only.
  - (b) Dividend can be declared by a company after providing only for current year's depreciation.
  - (c) Interest on debentures is payable only when there is profit.
  - (d) A company cannot purchase its own shares.
  - (e) Contingent liabilities relating to outsiders must be shown on the liability side of the consolidated balance sheet.

*(2 marks each)*

- (ii) Re-write the following sentences after filling-up the blank space with appropriate word(s) so as to convey the correct meaning:
- (a) \_\_\_\_\_ advises the Central Government on the formulation and implementation of Accounting Standards in India.
  - (b) \_\_\_\_\_ are money held and assets to be received in fixed or determinable amounts of money.
  - (c) Depreciation on fixed assets should be divided between pre-and post-incorporation period in the ratio of \_\_\_\_\_ while preparing income statement.
  - (d) A company which controls another company by acquisition of majority of shares is known as \_\_\_\_\_.
  - (e) If the proposed dividend is 20 percent, the percentage of profit to be transferred to general reserve is \_\_\_\_\_ percent.

*(1 mark each)*

- (iii) The following particulars are available for Max India Ltd. relating to issue & forfeiture of equity shares. The amount payable per share was ₹3 on Application, ₹5 on allotment (including ₹2 as premium) and ₹4 on first & final call.

Category	No. of shares Alloted	No. of shares applied
I	20,000	30,000
II	10,000	10,000
III	—	5,000

Allotment were made on pro-rata basis. Rajesh who applied for 450 shares in category I, failed to pay the allotment and call money.

Subsequently, his shares were forfeited and 200 forfeited shares were re-issued to Shyam as fully paid for ₹ 9 per share. Journalise the above transactions. (5 marks)

2 (i) Write short notes on *any two* of the following

- Amortisation Period
- Dividend received from subsidiaries
- Profit prior to incorporation

(4 marks each)

(ii) The balance sheet of AMP Ltd. as 31st March, 2011 is as follows:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
10,000 Equity Share of ₹10 each fully paid	1,00,000	Fixed Assets	2,62,000
11% Preference Shares of ₹100 each	1,00,000	Debtors	90,000
Less: Calls-in-arrear @ ₹20 per share	<u>6,000</u>	Stock	30,000
10% Preference Shares of ₹10 each fully paid	1,00,000	Investments	30,000
General Reserve	40,000	Bank	4,000
Profit & Loss Account	20,000		
Securities Premium Account	5,000		
Capital Reserve	30,000		
Creditors	<u>27,000</u>		
	<u>4,16,000</u>		<u>4,16,000</u>

11% preference shares were due for payment on 1st April, 2011 at a premium of 10%. The company sent the reminders for the final call on the remaining 300-11% preference shares and could collect money from shareholders holding 200 shares @ ₹20 per share and forfeited the defaulting 100 shares. The company sold all investments at 90% of the cost of such investments. The Company issued adequate number of new equity shares at par, to the extent that available profits were insufficient to back-up the redemption.

Draft journal entries and prepare the balance sheet of company after redemption. (7 marks)

3. (i) What are the objectives of International Accounting Standards?

(5 marks)

(ii) Winners India Limited was formed to take over a running business with effect from 1st April, 2010. The company was incorporated on 1st August, 2010, and the certificate of commencement of business was received on 1st October, 2010. The following profit and loss account has been prepared for the year ended 31st March, 2011.

**Profit and Loss Account for the year ended 31st March, 2011**

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Salaries	2,40,000	By Gross Profit b/d	16,00,000
To Printing and Machinery	24,000		
To Travelling expenses	84,000		
To Advertisement	80,000		
To Miscellaneous trade expenses	1,89,000		
To Rent (Office Building)	1,32,000		
To Electricity Charges	21,000		
To Directors' fees	56,000		
To Bad Debts	16,000		
To Commission to selling Agents	80,000		
To Audit fees	30,000		
To Debenture interest	15,000		
To Interest paid to vendors	21,000		
To Selling expenses	1,26,000		
To Depreciation on fixed assets	48,000		<u>16,00,000</u>
To Net Profit c/f	<u>4,38,000</u>		
	<u>16,00,000</u>		

The following additional information is also available:

- (i) Total sales for the year, which amounted to ₹ 96,00,000 arose evenly upto the date of the certificate of commencement of business, where after they spurted to record an increase of two-thirds during the rest of the year.
- (ii) Rent of office building was paid @ ₹10,000 per month upto September, 2010 and thereafter it was increased by ₹2,000 per month.
- (iii) Travelling expenses include ₹24,000 towards sales promotion.
- (iv) Depreciation includes ₹3,000 for assets acquired in the post-incorporation period.
- (v) Consideration was discharged by the company on 30th September, 2010 by issuing equity shares of ₹10 each.

Prepare the profit and loss account in columnar form showing distinctly the allocation of profits between pre-incorporation and post-incorporation periods, indicating the basis of allocation regarding each item.

(10 marks)

4. (i) Whiteline Ltd., acquired 3,200 equity shares of Blueline Ltd., on 31st March, 2011. The summarized balance sheets of the two companies as on that date

are given below:

**Balance Sheet**

<i>Liabilities</i>	<i>Whiteline Ltd. ₹</i>	<i>Blueline Ltd. ₹</i>	<i>Assets</i>	<i>Whiteline Ltd. ₹</i>	<i>Blueline Ltd. ₹</i>
Share Capital (₹100 each fully paid)	10,00,000	4,00,000	Land and Buildings	3,00,000	3,60,000
General Reserve	4,80,000	3,40,000	Plant and Machinery	4,80,000	3,18,800
Profit & Loss Account	1,14,400	72,000	Investment in Blueline Ltd. at cost	6,80,000	—
Bank Loan	1,60,000	—	Stocks	2,40,000	72,000
Bills Payable (including ₹8,000 to Whiteline Ltd.)	—	16,800	Sundry Debtors Bills Receivable (including ₹6,000 from Blueline Ltd.)	88,000	80,000
Sundry Creditors	94,400	18,000	Cash at Bank	31,600	16,000
	<u>18,48,800</u>	<u>8,46,800</u>		<u>18,48,800</u>	<u>8,46,800</u>

You are given with the following information :

- (a) Blueline Ltd., made a bonus issue on 31st March, 2011 of one equity share for every four shares held by its shareholders. Effect has not yet been given in the accounts for this.
- (b) The directors have decided to revalue the land and buildings and plant and machinery of Blueline Ltd., at ₹4,00,000 and ₹2,98,800 respectively.
- (c) Sundry creditors of Whiteline Ltd. included ₹24,000 due to Blueline Ltd.

Prepare the consolidated balance sheet as at 31st March, 2011 in the books of Whiteline Ltd. (10 marks)

- (ii) Discuss when a joint stock company can pay dividend out of capital profits. (5 marks)

**PART B**

(Answer Question No. 5 which is compulsory and any two from the rest of this part)

5. (i) State with reasons in brief, whether the following statements are *true or false*.
  - (a) Bin card shows the value of material at any moment of time.

- (b) If a labour saves half of time of the standard time, the incentive amount under Halsey Plan and Rowan Plan will be equal.
- (c) Loss of material due to fire is treated as overhead and included for calculating cost of production.
- (d) Cost reduction is cost control.
- (e) A firm is said to be financially sound if it is not able to meet its long term commitments. *(2 marks each)*
- (ii) Re-write the following sentences after filling-up the blank space with appropriate word(s) so as to convey the correct meaning :
- (a) Profit volume ratio is logical extension of \_\_\_\_\_
- (b) Debt equity ratio is the relation between \_\_\_\_\_ and \_\_\_\_\_ in a firm.
- (c) Break even is the point where total \_\_\_\_\_ equals the \_\_\_\_\_.
- (d) \_\_\_\_\_ is a summary of all functional budgets in a capsule form. *(1 mark each)*
- (iii) Comment on any two of the following:
- (a) ~~Management accounting is an extension of managerial aspects of financial accounting and cost accounting".~~
- (b) ~~Costing system has become an essential tool in the hands of management".~~
- (c) ~~Preparation of break -even chart depends on various assumptions".~~ *(3 marks each)*
6. (i) Calculate the machine hour rate for a machine for the year from the following information related to five machines of similar type in a shop.
- |  |                 |
|--|-----------------|
| Rent and rates for the shop            | ₹ 2400          |
| Depreciation each machine              | ₹ 250           |
| Repairs & maintenance for 5 machines   | ₹ 500           |
| Electric charges for light in the shop | ₹ 270           |
| Two attendants for 5 machines          | ₹ 30 per month  |
| One supervisor for 5 machines          | ₹ 125 per month |
| Sundry supplies for the shop           | ₹ 225           |
- Each machine uses 10 units of power per hour. *(10 marks)*
- (ii) What do you mean by under/over absorption of overheads? How is it treated in cost accounts? *(5 marks)*
7. A company manufacturers and sells a product, the price of which is controlled by the Government. Raw material required for this product is also made available at a fixed controlled price. The following figures have been called for the previous two accounting years of the company:

	Year I	Year II
Quantity sold (tones)	1,26,000	1,44,000
Price per tonne	₹185	₹185
	(₹ in thousands)	
Sales Value	23,310	26,640
Raw Materials	11,340	12,960
Direct Labour	1,512	1,872
Factory, Administration and Selling Expenses	9,702	11,232
Profit	756	576

During Year II direct labour rates increased by 8%. Increases in factory, administration and selling expenses during the year were ₹ 8,10,000 on account of factors other than the increased quantities produced and sold. The managing director desires to know, what quantity if they had produced and sold would have given the company the same net profit per tonne in Year II as it earned during Year I. Advise him. (15 marks)

8. X Limited has the following balances as on 1<sup>st</sup> April, 2010 :

	₹
Fixed Assets	11,40,000
Less : Depreciation	<u>(3,99,000)</u>
	7,41,000
Stocks and Debtors	4,75,000
Bank Balance	66,500
Creditors	1,14,000
Bills Payable	76,000
Capital (Shares of ₹100 each)	5,70,000

The company made the following estimates for Financial Year 2010-11:

- The company will pay a free of tax dividend of 10%. The rate of tax being 25%.
- The company will acquire fixed assets costing ₹ 1,90,000 after selling one machine for ₹ 38,000 costing ₹95,000 and on which depreciation provide amounted to ₹66,500.
- Stocks and Debtors, Creditors and Bills payables at the end of financial year are expected to be ₹ 5,60,500, ₹ 1,48,200 and ₹ 98,800 respectively.
- The profit would be ₹ 1,04,500 after depreciation of ₹.1,14,000.

You are required to: Prepare the Projected Cash Flow Statement and ascertain the bank balance of X Ltd. at the end of Financial Year 2010-11.

(15 marks)

**TEST PAPER 4/2011**  
**(Based on all Study Lessons)**

*Time allowed: 3 hours*

*Maximum marks: 100*

**PART A**

*(Answer Question No. 1 which is compulsory and  
any two from the rest of this part)*

1. (i) State with reasons in brief, whether the following statements are *true or false*:
- (a) There is no limit on the total managerial remuneration payable by a private company which is a subsidiary of a public company to its directors.
  - (b) Redemption of preference shares can not be made out of the fresh issue of debentures.
  - (c) Minority interest in a subsidiary does not include the paid up value of the preference shares of the holding company held by the outsiders.
  - (d) An intangible asset should be derecognized on disposal or when no future economic benefits are expected from its use and subsequent disposal.
  - (e) In the final accounts of the company, provision for income tax for the current year is shown as appropriation of profits. *(2 marks each)*
- (ii) Re-write the following sentences after filling - up the blank space with appropriate word(s) so as to convey the correct meaning:
- (a) Every buyback should be completed within \_\_\_\_\_ months from the date of passing the special resolution.
  - (b) Preliminary expenses are to be treated as \_\_\_\_\_ expenses while allocating expenses between pre-incorporation and post incorporation periods.
  - (c) When an underwriter agrees to buy or subscribe a certain number of shares or debentures irrespective of the result of the issue of the prospectus, it is a case of ----- underwriting.
  - (d) Yield value of share based on rate of earning = \_\_\_\_\_.
  - (e) The methods relating to valuation of shares on net asset basis may be \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
- (1 mark each)*
- (iii) On 31<sup>st</sup> March 2010 Rohini Ltd., issued 4,000-7% debentures of ₹500 each at ₹475 each. Debentureholders had an option to convert their holding into 8% Preference Shares of ₹100 each at a premium of ₹25 per share. On 31<sup>st</sup> March 2011 one year's interest had accrued on these debentures and remained unpaid.
- A holder of 100 Debentures notified his intention to convert his holding

into 8% preference shares.

Journalise the above transactions and prepare the balance sheet as on 31st March, 2011 showing the relevant items. (5 marks)

2. (i) Vishal Ltd., invited applications for the issue of 1,00,000 equity shares of ₹10 each payable ₹4 on application. ₹ 5 (including ₹3 as securities premium) on allotment and balance on first and final call. The prospectus provided that in case of partial allotment, money received in excess on application would be adjusted towards the amounts due on allotment and call.

The company received applications for 2,50,000 shares out of which applications for 50,000 shares were rejected out rightly and other applicants were allotted shares on pro-rata basis. The company received all moneys due on allotment and call except from one shareholder (who applied for 2,000 shares) who failed to pay the allotment and the call moneys. The company forfeited his shares.

Out of the forfeited shares, the company reissued 600 shares at the rate of ₹8 per share, fully paid up.

You are required to journalise the above transactions and prepare the cash book. (8 marks)

- (ii) A firm which was carrying on business from 1st July 2010 gets itself incorporated as a company on 1<sup>st</sup> November 2010. The first accounts are drawn up to 31<sup>st</sup> March 2011.

The gross profit for the period is ₹5,60,000. The general expenses are ₹1,42,200, Directors' fee ₹1,20,000 p.a.; formation expenses ₹15,000. Rent up to 31<sup>st</sup> December 2010 is ₹12,000 p.a., after which it is increased to ₹30,000 per annum. Salary of the manager, who upon incorporation of the company was made a director, is ₹60,000 p.a. His remuneration thereafter is included in the above figure of fee to directors.

Give Profit and Loss Account showing pre-and post-incorporation profits. The net sales are ₹82,00,000, the monthly average of which, for the first four months of 2010 is half of that of the remaining period, the company earned a uniform profit. Interest and tax may be ignored. (7 marks)

3. (i) State the conditions to be fulfilled by a joint stock company to buyback its own shares. (5 marks)

- (ii) On 1<sup>st</sup> April 2010, Suman Ltd. has a subscribed share capital of ₹500,000 divided into 50,000 fully paid equity shares of ₹ 10 each. It had accumulated capital and revenue profits of ₹ 390,000 when Hero Ltd. acquired 80% of shares of Suman Ltd. for ₹ 9,00,000. On 31<sup>st</sup> March 2011, profits of Suman Ltd. amounted to ₹ 260,000. On 31<sup>st</sup> March 2011, Suman Ltd. issued by way of bonus, one fully paid equity share of ₹ 10 for every five equity shares held out of its pre-acquisition profits.

Calculate as on 31<sup>st</sup> March 2011 Cost of Control & minority interest:

- (i) just before issue of bonus shares and  
(ii) immediately after issue of bonus shares.

(10 marks)

4. (i) How an intangible asset acquired by way of a Government grant is valued? (5 marks)
- (ii) From the following particulars, calculate the fair value of an equity share assuming that out of the total assets, assets worth ₹ 35,000 are fictitious.
- Share capital: 45,000 10% preference shares of ₹ 100 each fully paid 45,000 equity shares of ₹ 10 each fully paid.
  - Liability to outsiders – ₹ 7,50,000
  - Reserves and surplus - ₹ 3,50,000
  - The average normal profit after tax - ₹ 850,000.
  - The normal profit earned on the market value of fully paid equity shares of similar companies is 9%.
  - Company transfers every year ₹ 100,000 to reserves.
- (10 marks)

### PART B

*(Answer Question No. 5 which is compulsory and any two from the rest of this part)*

- 5 (a) State with reasons in brief, whether the following statements are *correct* or *incorrect*:
- (i) Total variable cost changes in proportion to changes in output.
  - (ii) Under Halsey system of wage plan the effective hourly rate is higher up to 50% of the time saved and decreases thereafter.
  - (iii) Escalation clause in a contract provides that the contract price is fixed.
  - (iv) Cash generated from trading operations is equal to the net profit as reported in the profit and loss account.
  - (v) Statement of cost and profit when presented in T form is production account. (2 marks each)
- (b) Re-write the following sentences after filling - up the blanks space with appropriate word(s) so as to convey the correct meaning:
- (i) The measurable value of an alternative use of resources is referred to as a (an) -----
  - (ii) ----- is a quantitative record of receipts, issues and closing balances of items of stores.
  - (iii) The ratio of the number of persons leaving in a period to the average number of employees is known as -----
  - (iv) Under/over absorption of overhead arises when overhead absorption is based on ----- rates.
  - (v) Debt service ratio is also known as ----- (1 mark each)

- (c) Choose the most appropriate answer from the given options in respect of the following:
- (i) In job order costing provident fund paid by the employer for factory employees is accounted as:
    - (a) Direct labour
    - (b) Factory overhead
    - (c) Indirect labour
    - (d) Administrative cost.
  - (ii) A written order sent to inform the purchasing department for a need for material is called:
    - (a) Purchase order
    - (b) Purchase requisition
    - (c) Material requisition form
    - (d) Receiving report.
  - (iii) A budget in which a responsibility centre manger must justify each planned activity and its estimated total cost is known as:
    - (a) Master budget
    - (b) Zero base budget
    - (c) Functional budget
    - (d) Flexible budget
  - (iv) Increase in the amount of prepaid expenses results in:
    - (a) Increase in cash
    - (b) Decrease in cash
    - (c) No change in cash
    - (d) Cash flow from investing activities.
  - (v) Over-absorption of factory overhead due to inefficiency of management should be disposed by:
    - (a) Supplementary rate
    - (b) Transfer to costing profit and loss account
    - (c) Carry forward to next year
    - (d) Transfer to production account (1 mark each)
6. (a) From the following particulars compute a conservative estimate of profit on a contract by four different methods. The contract is 80% complete.

	₹
Total expenditure to date	85,000
Estimated further expenditure to complete the contract	17,000
Contract Price	1,53,000
Work certified	1,00,000
Work not certified	8,500
Cash received	81,600

(9 marks)

- (b) Mania Traders has prepared the following budget estimates for the year 2008-09:

Sales Units	₹ 30,000
Fixed expenses	₹ 1,36,000
Sales value	₹ 6,00,000
Variable costs	₹ 24 per unit

You are required to find:

- (i) P/V ratio,  
(ii) Break-even point and  
(iii) Margin of safety. (6 marks)

- 7 .(i) Distinguish between fixed and flexible budget. (3 marks)

- (ii) Standard output in 10 hrs. is 240 units; actual output in 10 hours is 264 units. Wages rate is ₹ 10 per hour. Calculate the amount of bonus and total wages under Emerson Plan. (3 marks)

- (iii) Following particulars are available for the year 2011 in respect of a product manufactured by GAMMA Ltd.

- monthly demand : 2000 units  
→ ordering cost : ₹ 200  
→ Annual carrying cost per unit :  $6\frac{1}{2}\%$  of unit price  
→ Purchase price of one input unit : ₹ 200  
→ Usage : Minimum : 50 units per week  
Maximum : 150 units per week  
→ Re-order period : 8 to 12 weeks

Compute following from the above details:

- (a) Re-order quantity  
(b) Re-order level  
(c) Minimum level  
(d) Average stock level  
(e) Total cost p.a. if order size is of EOQ. (9 marks)

8. (i) The financial statement and operating results of PQR revealed the following position as on 31<sup>st</sup> March, 2010:

Equity share capital (₹10 fully paid share)	₹20,00,00	Cost of Sales	₹14,40,000
Working capital	₹6,00,000	Debtors Velocity	2 months
Bank Overdraft	₹1,00,000	Stock turnover based on cost of sales	4 times
Current Ratio	2.5 : 1	Gross Profit Ratio	20% of Sales
Liquidity Ratio	1.5 : 1	Net Profit Ratio	15% of Sales
Proprietary Ratio (Net Fixed Assets/Proprietary Fund)	0.75 : 1		

Closing stock was 25% higher than the Opening Stock. There were also free reserves brought forward from earlier years. Current assets include stock, debtors and cash only. The current liabilities except bank overdraft are treated as creditors.

Expenses include depreciation of ₹ 90,000.

The following information was collected from the records for the year ended 31st March, 2011:

- ◆ Total sales for the year were 20% higher as compared to previous year.
- ◆ Balances as on 31<sup>st</sup> March, 2011 were : Stock ₹ 5,20,000, Creditors ₹4,15,000, Debtors ₹ 4,95,000 and Cash balance ₹ 3,10,000.
- ◆ Percentage of Gross Profit on turnover has gone up from 20% to 25% and Ratio of net profit to sales from 15% to 16%.
- ◆ A portion of Fixed Assets was very old (book value ₹ 1,80,000) disposed for ₹ 90,000. (No depreciations to be provided on this item.
- ◆ Long-term investments were purchased for ₹ 2,96,600.
- ◆ Bank overdraft fully discharged.
- ◆ Percentage of depreciation to Fixed Assets to be provided at the rate in the previous year.

You are required to: Prepare Balance Sheet as at 31<sup>st</sup> March, 2010 and 31<sup>st</sup> March, 2011. (10 marks)

- (ii) Discuss the usefulness of preparing cash flow statement. (5 marks)
-

**TEST PAPER 5/2011**

(COMPULSORY)

**(Based on all Study Lessons)**

*Time allowed: 3 hours*

*Maximum marks : 100*

**PART A**

(Answer Question No. 1 which is compulsory and any two from the rest of this part)

- 1 (a) State with reasons in brief, whether the following statements are *correct* or *incorrect*.
- (i) Capital redemption reserve account can be utilized for writing off preliminary expenses.
  - (ii) Total remuneration payable to the manager under section 387 of the companies Act 1956 can not exceed 3 percent of their net profit of the company.
  - (iii) Dividend paid out of pre-acquisition profits by the subsidiary company must be credited to investment account by the holding company.
  - (iv) Issue of bonus shares is not permissible unless the existing paid up shares are made fully paid up.
  - (v) Sinking fund is created to redeem debentures in instalments.
- (2 marks each)*
- (b) Re-write the following sentences after filling-up the blank space with appropriate word(s) so as to convey the correct meaning:
- (i) Register of members is a \_\_\_\_\_ book.
  - (ii) IFRS are issued by \_\_\_\_\_.
  - (iii) The maximum limit of managerial remuneration payable by a limited company can not exceed more than \_\_\_\_\_ percent of net profit in any financial year.
  - (iv) A company may allot fully paid shares to promoters for the services rendered by them without payment, is known as issue of shares for \_\_\_\_\_.
  - (v) If the price paid by the holding company for the shares acquired in the subsidiary company is less than the intrinsic value of the shares acquired, the difference is treated as \_\_\_\_\_.
- (1 mark each)*
- (c) Give necessary journal entries both at the time of issue and redemption of debentures in the following case:-  
Eagle Ltd. issued ₹100,000, 15% Debentures of ₹100 each at a discount of 5% but redeemable at a premium of 5% at the end of 4 years.
- (5 marks)*
2. (i) What is the amortization period of intangible assets? Can useful life of the intangible assets exceed the period of legal rights? *(5 marks)*

- (ii) What do you understand by 'provision for taxation'? What factors are to be considered while estimating the provision for taxation? (5 marks)
- (iii) As a matter of sound commercial policy, current profits are to be applied while paying dividend out of current profits without making good past losses." (5 marks)
- 3 (a) Santosh Ltd. was formed with a capital of ₹20,00,000 divided into 2,00,000 equity shares of ₹10 each. All shares were issued to public for subscription. The issue was underwritten as follows:  
Alok: 80,000 shares; Benny : 60,000 shares; and Chopra : 60,000 shares.  
Marked applications were received in favour of Alok for 32,000 shares; Benny for 58,000 shares and Chopra for 42,000 shares. Applications for 30,000 shares were not marked.  
Prepare a statement showing net liability of each underwriter.

(6 marks)

- (b) The following is the balance sheet of Soft Ltd. as at 31<sup>st</sup> March, 2011:

<u>Liabilities:</u>	(₹)
Share Capital	
4,00,000 Equity of ₹10 each, fully paid-up	40,00,000
4,00,000 Equity of ₹10 each, paid-up ₹7.50 per share	30,00,000
4,00,000 Equity of ₹10 each, paid-up ₹5 per share	20,00,000
Reserves and surplus	56,00,000
Provision for bad debts	1,20,000
Sundry creditors	20,40,000
Dividend equalization fund	<u>6,40,000</u>
	<u>1,74,00,000</u>
<u>Assets:</u>	
Patent and Copyrights	8,00,000
Land and buildings	48,00,000
Plant and machinery	48,00,000
Stock	24,00,000
Investments at Cost	6,00,000
Debtors	32,00,000
Bank	6,40,000
Preliminary expenses	<u>60,000</u>
	<u>1,74,00,000</u>

Additional information is as follows:

- ◆ The normal average profit (after tax) for the company is estimated to be ₹21, 60,000.
- ◆ The applicable capitalization rate is 12%.

- ◆ The revised values of Patent and copyrights are estimated @ 50% of its value; and Land and buildings and plant and machinery are revalued at ₹60, 00,000 and ₹52, 00,000 respectively.
- ◆ Investments have a market value of ₹7, 20,000.
- ◆ Provision for bad and doubtful debts to be maintained @ 2%.
- ◆ The balance sheet as at 31<sup>st</sup> March, 2011 does not contain a provision for income-tax, which are estimated at ₹3, 00,000.

You are required to calculate the value of fully and partly paid-up equity share (per share) by:

- (i) The asset backing method (excluding goodwill); and
  - (ii) The earning capacity method. (9 marks)
- 4 (a) What do you mean by profit prior to incorporation? Explain how it is treated in books of account. (5 marks)
- (b) White Ltd acquired 6,400 equity shares of Black Ltd., on 31<sup>st</sup> March, 2011. The summarized balance sheets of the two companies as on that date are given below:

Balance Sheet

Liabilities	White Ltd. ₹	Black Ltd. ₹	Assets	White Ltd. ₹	Black Ltd.
Share Capital (₹100 each fully paid)	20,00,000	8,00,000	Land and Buildings	6,00,000	7,20,000
General Reserve	9,60,000	6,80,000	Plant and Machinery	9,60,000	6,37,600
Profit & Loss Account	2,28,800	1,54,000	Investment in Black Ltd. at cost	13,60,000	---
Bank Loan	3,20,000	---	Stocks	4,80,000	1,44,000
Bills Payable (including ₹16,000 to White Ltd.)	---	23,600	Sundry Debtors	1,76,000	1,60,000
Sundry Creditors	188,800	36,000	Bills Receivable (including ₹12,000 from Black Ltd.)	63,200	---
			Cash at Bank	58,400	32,000
	<u>36,97,600</u>	<u>16,93,600</u>		<u>36,97,600</u>	<u>16,93,600</u>

You are given with the following information:

- (a) Black Ltd., made a bonus issue on 31<sup>st</sup> March, 2011 of one equity share for every four shares held by its shareholders. Effect has not yet been given in the accounts for this.
- (b) The directors have decided to revalue the land and buildings and plant and machinery of Black Ltd., at ₹8, 00,000 and ₹ 5,97,600 respectively.
- (c) Sundry creditors of White Ltd. included ₹48, 000 due to Black Ltd.

Prepare the consolidated balance sheet as at 31<sup>st</sup> March, 2011 in the books of White Ltd.

(10 marks)

**PART – B**

(Answer Question No.5, which is compulsory and **any two** of the rest from this part)

5 (a) State with reasons in brief, whether the following statements are *correct* or *incorrect*:

- (i) Variable cost per unit keeps on varying with rise in output.
- (ii) Escalation clause in a contract provides that the contract price is fixed.
- (iii) Piece rate system of wages is suitable when quality of goods produced is of extreme importance.
- (iv) Under absorption costing both fixed and variable costs are assigned to products.
- (v) Management accounting based on double entry system.

(2 marks each)

(b) Re-write the following sentences after filling - up the blanks space with appropriate word(s) so as to convey the correct meaning:

- (i) \_\_\_\_\_ is a budget that is designed to furnish budgeted costs for any level of activity actually attained.
- (ii) Under/over absorption of overhead arises when overhead absorption is based on \_\_\_\_\_ rates.
- (iii) Imputed costs are relevant for \_\_\_\_\_
- (iv) Material losses due to abnormal reasons should be transferred to \_\_\_\_.

(1 mark each)

(iii) Comment on *any two* of the following:

- (a) Cost accountants are key to economy in manufacture and are indispensable to the intelligent and economical management of a factory.
- (b) Classification of overhead into fixed and variable is highly helpful to the management for the efficient running of the factory.
- (c) Ratio analysis is only a technique for making judgements and a not a substitute for judgements.

(3 marks each)

6. (i) Describe in brief different methods of analysing financial statements?

(5 marks)

(ii) A single product manufacturing company has an installed capacity of 3,00,000 units per annum. The normal capacity utilization of the company is 90%. The company has prepare the following budget for a year:

Variable Factory Costs	₹33 per unit
Variable Selling and Administration Costs	₹9 per unit
Fixed Factory Costs	₹21,60,000
Fixed Selling and Administration Costs	₹7,56,000

Selling Price per unit ₹60

The actual production, sales, price and cost data relating to the year under review are as given below:

Production	2,40,000 units
Sales	2,25,000 units
Finished Goods Stock in the beginning of the year	15,000 units
Actual Factory variable Costs exceeded the budget by	₹ 1,20,000

You are required to:

- Calculate the Budgeted Profit and Break Even Point in Units
- What increase in selling price was necessary during the year under review to maintain the budgeted point?
- Prepare statements showing the actual profit during the year under review by using (1) Absorption Costing Method and (2) Marginal Costing Method. (10 marks)

7. (a) What is the difference between Halsey plan and rowan plan of remunerating workers? Which one is more beneficial to workers?

(5 marks)

- (b) Mania Traders has prepared the following budget estimates for the year 2010 -11:

Sales Units	30,000
Fixed expenses	₹ 1,36,000
Sales value	₹ 6,00,000
Variable costs	₹ 24 per unit

You are required to:

- Find the P/V ratio, break-even point and margin of safety.
- Calculate the revised P/V ratio, break even point and margin of safety in each of the following cases:
  - Decrease of 10% in selling price.
  - Increase of 10% in variable cost.
  - Increase of sales volume by 2000 units
  - Increase of fixed cost ₹12,000. (10 marks)

8. (i) –The concept of ‘performance budgeting’ relates to greater management efficiency especially in government organizations”. Explain. (5 marks)

- (ii) The Balance Sheet of X Ltd. as at 31<sup>st</sup> March, 2010 is as follows:

Liabilities	₹ ('000)	Assets	₹ ('000)
Equity Share Capital	6,000	Fixed Assets (at cost)	16,250
8% Preference Share Capital	3,250	Less: Depreciation written off	5,200
Reserves and Surplus	1,400	Stock	1,950
10% Debentures	1,950	Sundry debtors	2,600
Sundry Creditors	3,250	Cash	250
	<u>15,850</u>		<u>15,850</u>

The following additional information is available:

- ◆ The stock turnover ratio based on cost of goods sold would be 6 times.
- ◆ The cost of fixed assets to sales ratio would be 1.4.
- ◆ Fixed assets costing ₹30,00,000 to be installed on 1<sup>st</sup> April, 2010, payment would be made on 31<sup>st</sup> March, 2011.
- ◆ In March, 2011, a dividend of 7% on equity capital would be paid.
- ◆ ₹5,50,000, 11% Debentures would be issued on 1<sup>st</sup> April, 2010.
- ◆ ₹30,00,000, Equity shares would be issued on 31<sup>st</sup> March, 2011.
- ◆ Creditors would be 25% of materials consumed.
- ◆ Debtors would be 10% of sales.
- ◆ The cost of goods sold would be 90% of sales including material 40% and depreciation 5% of sales.
- ◆ The profit is subject to debenture interest and taxation @ 30%.

You are required to:

- (i) Prepare the Projected Balance Sheet as at 31<sup>st</sup> March, 2011.
  - (ii) Prepare the Projected Cash Flow Statement in accordance with AS-3.  
(10 marks)
-

EXECUTIVE PROGRAMME  
**COMPANY ACCOUNTS, COST AND MANAGEMENT ACCOUNTING**

**QUESTION PAPERS OF PREVIOUS SESSIONS**

*Question papers of immediate past two examinations of Company Accounts, Cost and Management Accounting paper are appended to this study material for reference of the students to familiarize with the pattern and its structure. Students may please note that answers to these questions should not be sent to the Institute for evaluation.*

**JUNE 2011**

*Time allowed : 3 hours*

*Maximum marks : 100*

**NOTE:** *All working notes should be shown distinctly.*

**PART A**

*(Answer Question No.1 which is COMPULSORY and  
**ANY TWO** of the rest from this part.)*

1. (a) Write the most appropriate answer from the given options in respect of the following :
  - (i) As per section 77A(4) of the Companies Act, 1956 from the date of passing the special resolution, every buy-back should be completed within —
    - (a) 12 Months
    - (b) 3 Months
    - (c) 6 Months
    - (d) 9 Months.
  - (ii) Profit prior to incorporation is transferred to —
    - (a) General reserve
    - (b) Capital reserve
    - (c) Profit and loss account
    - (d) None of the above.
  - (iii) Dividends are usually paid on —
    - (a) Paid-up capital
    - (b) Authorised capital
    - (c) Called up capital

- (d) Subscribed capital.
- (iv) Sinking fund for the redemption of debentures is an instance of —
  - (a) Reserve
  - (b) Provision
  - (c) Reserve fund
  - (d) Reserves and surplus.
- (v) At the time of issuance, shares can be underwritten by —
  - (a) Only one underwriter
  - (b) At least 2 or more persons jointly
  - (c) Any number of underwriters
  - (d) None of the above. (1 mark each)

(b) Re-write the following sentences after filling-in the blank spaces with appropriate word(s)/figure(s) :

- (i) Preliminary expenses being of capital nature may be written-off against \_\_\_\_\_.
- (ii) Companies declaring, distributing or paying dividends are liable to pay tax on the same at prescribed rate which is known as \_\_\_\_\_.
- (iii) An intangible asset should be \_\_\_\_\_ on disposal or when no future economic benefits are expected from its use and subsequent disposal.
- (iv) The value of the right is the difference between \_\_\_\_\_ and the \_\_\_\_\_ of the share.
- (v) The fair value of a share is the average of the value of the share obtained by the \_\_\_\_\_ method and \_\_\_\_\_ method.

(1 mark each)

(c) State, with reasons in brief, whether the following statements are true or false :

- (i) According to section 80 of the Companies Act, 1956, the redemption of preference shares by a company shall be taken as reducing the amount of its authorised share capital.
- (ii) A profit and loss account is a point statement whereas a balance sheet is a period statement.
- (iii) Internally generated goodwill should not be recognised as an asset.
- (iv) A company can enforce its lien by forfeiting the shares.
- (v) A limited company can retain excess application money as calls-in-advance even if there is no provision in the articles of association.

(2 marks each)

2. (a) Distinguish between **any two** the following :

- (i) 'Bonus shares' and 'rights shares'.
- (ii) 'Interim dividend' and 'final dividend'.
- (iii) 'Statutory books' and 'statistical books'.

(3 marks each)

- (b) Following are the balance sheets of H Ltd. and S Ltd. as at 31st December, 2010 :

<i>Liabilities</i>	<i>H Ltd.</i> (Rs.)	<i>S Ltd.</i> (Rs.)
Equity share of Rs. 100 each fully paid	5,00,000	2,00,000
General reserve	1,00,000	—
Profit and loss account	80,000	—
14% Debentures	—	1,00,000
Creditors	<u>75,000</u>	<u>45,000</u>
	<u>7,55,000</u>	<u>3,45,000</u>
 <i>Assets</i>		
Fixed assets	3,50,000	1,50,000
Stock	90,000	40,000
Debtors	60,000	30,000
14% Debentures in S Ltd. (at par)	60,000	—
Equity shares in S Ltd. @ Rs. 80 per share	1,20,000	—
Bank	75,000	25,000
Profit and loss account	<u>—</u>	<u>1,00,000</u>
	<u>7,55,000</u>	<u>3,45,000</u>

H Ltd. acquired 1,500 shares in S Ltd. on 1st May, 2010. The profit and loss account of S Ltd. showed a debit balance of Rs. 1,50,000 on 1st January, 2010. During March, 2010, goods costing Rs. 6,000 were destroyed by fire, against which the insurance company paid Rs. 2,000 only to S Ltd. Creditors of S Ltd. include Rs. 20,000 for goods supplied by H Ltd. on which H Ltd. made a profit of Rs. 2,000. Half of the goods were sold out of this. An item of plant (included in fixed assets) of S Ltd. had book value of Rs. 15,000. It was to be revalued at Rs. 20,000 on 1st January, 2010 (ignore depreciation). Prepare consolidated balance sheet as on 31st December, 2010. (9 marks)

3. (a) Write short notes on **any two** of the following :
- (i) Purchase of own debentures in the market by a company
  - (ii) Tax on distributed profit
  - (iii) Lien on shares. (3 marks each)
- (b) The following particulars of Jag Apna Ltd. are available :
- (i) Share capital :
    - 10,000 Equity shares of Rs. 10 each fully paid
    - 1,000, 12% Preference shares of Rs. 100 each fully paid
  - (ii) Reserves and surplus : Rs. 15,000
  - (iii) External liabilities :
    - Creditors : Rs. 12,000
    - Bills payable : Rs. 6,000
  - (iv) The average normal profits (after taxation) earned each year by the

company : Rs. 28,500.

- (v) Assets of the company include one fictitious item of Rs. 800.
- (vi) The fair or normal rate of return in respect of the equity shares of this type of company is ascertained at 10%.

Calculate the value of each equity share by using — (i) assets backing method; (ii) yield method; and (iii) fair value method. (6 marks)

- (c) A limited company has a paid-up equity share capital of Rs. 15,00,000 divided into 1,50,000 shares of Rs. 10 each and 11% preference share capital of Rs. 5,00,000 divided into 5,000 shares of Rs. 100 each. The balance of profit brought forward from the previous balance sheet was Rs. 38,000.

The profit for the year ended 31st March, 2010 amounted to Rs. 5,80,000 after tax. The directors proposed a dividend of 24% on equity share capital after providing for — (i) statutory minimum transfer to general reserve; and (ii) dividend on preference shares. Ignore tax on distributed profit. Prepare profit and loss appropriation account. (3 marks)

- 4. (a) Alex Ltd. forfeited 100 shares of Rs. 10 each issued at a premium of 20% (to be paid at the time of application money) on which allotment money of Rs. 4 and first call money of Rs. 3 were not received; the final call money of Rs. 2 is not yet called. These shares were originally allotted in the ratio of 4:5. These shares were subsequently re-issued at a discount of Rs. 1 per share, credited as Rs. 8 paid-up.

Pass journal entries in the books of Alex Ltd. (3 marks)

- (b) What are the conditions which must be fulfilled for redemption of preference shares ? (6 marks)
- (c) Zohar Ltd. has 12%, Rs. 4,00,000 debentures outstanding in its books on 1st April, 2009. It also had Rs. 2,40,000 balance in sinking fund account represented by 8% investments (face value of Rs. 3,00,000).

On 30th December, 2009, it sold investments of face value of Rs. 40,000 @ Rs. 90 and purchased own debentures of the face value of Rs. 40,000 out of the proceeds, for immediate cancellation.

The interest dates for both debentures and investments are 30th September and 31st March respectively. All transactions are made on cum interest basis. Show debenture account, sinking fund account and sinking fund investment account. (6 marks)

### PART B

(Answer Question No.5 which is *COMPULSORY* and **ANY TWO** of the rest from this part.)

- 5. (a) Write the most appropriate answer from the given options in respect of the following :
  - (i) When the sales increase from Rs. 40,000 to Rs. 60,000 and profit increases by Rs. 5,000, the P/V ratio is —

- (a) 20%  
 (b) 30%  
 (c) 25%  
 (d) 40%.
- (ii) A company which has a margin of safety of Rs. 4,00,000 makes a profit of Rs. 80,000. Its fixed cost is Rs. 5,00,000, its break-even sales will be —  
 (a) Rs. 20 lakh  
 (b) Rs. 30 lakh  
 (c) Rs. 25 lakh  
 (d) Rs. 40 lakh.
- (iii) Cost is determined before hand under —  
 (a) Standard costing  
 (b) Historical costing  
 (c) Marginal costing  
 (d) None of the above.
- (iv) Continuous stock taking is a part of —  
 (a) Annual stock taking  
 (b) Perpetual inventory  
 (c) ABC Analysis  
 (d) None of the above.
- (v) Absorption means —  
 (a) Charging of overheads to cost centres  
 (b) Charging of overheads to cost units  
 (c) Charging of overheads to cost centres or cost units  
 (d) None of the above. (1 mark each)
- (b) Re-write the following sentences after filling-in the blank spaces with appropriate word(s)/figure(s) :
- (i) \_\_\_\_\_ budget is a summary budget incorporating the component functional budgets and which is finally approved, adopted and employed.
- (ii) Costs which are pertinent for decision-making are termed as \_\_\_\_\_.
- (iii) A responsibility centre in which a manager is accountable for costs only is called \_\_\_\_\_.
- (iv) Contract in which reimbursement is based on actual allowable cost plus a fixed fee is called \_\_\_\_\_.
- (v) Excess of budgeted revenues over the break-even revenue is called \_\_\_\_\_.  
(1 mark each)
- (c) State, with reasons in brief, whether the following statements are true or false :

- (i) Direct costs and variable costs are not necessarily the same.
- (ii) Idle facility and idle time are the same.
- (iii) Overtime premium paid to all factory workers is usually considered direct labour.
- (iv) Assuming inflation, if a company wants to maximise net income, it would select FIFO as the method of pricing raw materials.
- (v) Collection of sundry debtors has no impact on current ratio.

(2 marks each)

6. (a) Distinguish between **any two** of the following :

- (i) 'Cost accounting' and 'management accounting'.
- (ii) 'Bin card' and 'store ledger'.
- (iii) 'Time keeping' and 'time booking'.

(3 marks each)

(b) From the following particulars of Bright Ltd., prepare cash flow statement as per AS-3 (Revised) :

*Balance Sheets*

<i>Liabilities</i>	<i>As on</i> <i>31.03.2009</i>	<i>As on</i> <i>31.03.2010</i>
	<i>(Rs.)</i>	<i>(Rs.)</i>
Equity share capital	3,00,000	3,50,000
18% Preference share capital	2,00,000	1,00,000
14% Debentures	1,00,000	2,00,000
Reserves and surplus	1,10,000	2,70,000
Creditors	70,000	1,45,000
Provision for doubtful debts	<u>10,000</u>	<u>15,000</u>
	<u>7,90,000</u>	<u>10,80,000</u>
 <i>Assets</i>		
Fixed assets (net)	5,10,000	6,20,000
10% Investments	30,000	80,000
Cash	40,000	75,000
Debtors	1,00,000	2,10,000
Stock	1,00,000	90,000
Discount on debentures	<u>10,000</u>	<u>5,000</u>
	<u>7,90,000</u>	<u>10,80,000</u>

You are informed that during the year —

- (i) A machine with a book value of Rs. 40,000 was sold for Rs. 25,000.
- (ii) Depreciation charged during the year was Rs. 70,000.
- (iii) Preference shares were redeemed on 31st March, 2010 at a premium of 5%.
- (iv) An interim dividend @15% was paid on equity shares on 31st March, 2010. Preference dividend was also paid on 31st March, 2010.

(v) New shares and debentures were issued on 31st March, 2010.

(9 marks)

7. (a) Write short notes on **any two** of the following :

- (i) Essentials of an effective budgetary control system
- (ii) Make or buy decisions
- (iii) Cost-plus contracts.

(3 marks each)

(b) Following are the ratios to the trading activities of National Traders Ltd. :

Debtors' velocity	3 months
Stock velocity	8 months
Creditors' velocity	2 months
Gross profit ratio	25%

Gross profit for the year ended 31st December, 2009 amounting to Rs.4,00,000.

Closing stock of the year is Rs. 10,000 more than the opening stock.

Bills receivable amount to Rs. 25,000.

Bills payable amount to Rs. 10,000.

Find out — (i) sales; (ii) sundry debtors; (iii) closing stock; and (iv) sundry creditors.

(6 marks)

(c) Explain the significance of decision-making costs. Briefly explain the various type of costs used by the management in decision-making.

(3 marks)

8. (a) From the following data provided to you, find out the labour turnover rate by applying (i) replacement method; and (ii) separation method :

Number of workers on the payroll :

– At the beginning of the month : 500

– At the end of the month : 600.

During the month, 5 workers left, 20 workers were discharged and 75 workers were recruited. Of these, 10 workers were recruited in the vacancies of those leaving and while the rest were engaged for an expansion scheme.

(4 marks)

(b) Following information is made available from the costing records of a factory :

(i) The original cost of the machine : Rs. 1,00,000

Estimated life : 10 years

Residual value : Rs. 5,000

Factory operates for 48 hours per week : 52 weeks in a year.

Allow 15% towards machine maintenance down time.

5% (of productive time assuming unproductive) may be allowed as setting-up time.

- (ii) Electricity used by the machine is 10 units per hour at a cost of 50 paise per unit.
- (iii) Repair and maintenance cost is Rs. 500 per month.
- (iv) Two operators attend the machine during operations alongwith two other machines. Their total wages including fringe benefits, amounting to Rs. 5,000 per month is paid.
- (v) Other overheads attributable to the machine are Rs. 10,431 per year.

Using above data, calculate machine hour rate. (6 marks)

(c) Following information is given :

Cost of placing a purchase order	Rs. 20
No. of units to be purchased during the year	5,000 Nos.
Purchase price per unit inclusive of transport cost	Rs. 50
Annual storage cost per unit	Rs. 5
Details of lead time :	
– Average	10 days
– Maximum	15 days
– Minimum	6 days
– For emergency purchase	4 days
Rate of consumption per day :	
– Average	15 units
– Maximum	20 units

Calculate — (i) re-ordering level; (ii) re-order quantity; (iii) maximum level; (iv) minimum level; and (v) danger level. (5 marks)

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**DECEMBER 2011***Time allowed : 3 hours**Maximum marks : 100***NOTE:** *All working notes should be shown distinctly.***PART A***(Answer Question No.1 which is COMPULSORY and  
ANY TWO of the rest from this part.)*

- 1 (a) State, with reasons in brief, whether the following statements are true or false:
- (i) The term 'distributable profits' means profits which would otherwise be available for dividends.
  - (ii) The logic behind the creation of the capital redemption reserve is to maintain the capital structure of the company intact after redemption.
  - (iii) Underwriting commission and brokerage both cannot be provided to any individual underwriter.
  - (iv) A debenture issued at a discount cannot be redeemed at a premium.
  - (v) International Accounting Standard-1 deals with valuation of inventories.
- (2 marks each)*
- (b) Write the most appropriate answer from the given options in respect of the following :
- (i) The balance of sinking fund account is transferred to —
    - (a) Share capital account
    - (b) General reserve account
    - (c) Profit and loss account
    - (d) Sinking fund investment account.
  - (ii) When interest on own debentures becomes due, it will be credited to—
    - (a) Profit and loss account
    - (b) Own debentures account
    - (c) Debenture interest account
    - (d) Interest on own debentures account.
  - (iii) Expenses incidental to the creation and floatation of a company are called —
    - (a) Underwriting expenses
    - (b) Preliminary expenses
    - (c) Trade expenses
    - (d) Establishment expenses.

- (iv) The item 'unpaid dividend' appears in the balance sheet of a company under the heading —
- Current assets, loans and advances
  - Reserves and surplus
  - Secured loans
  - Current liabilities and provisions.
- (v) Premium on issue of shares can be used for —
- Issue of bonus shares
  - Distribution of profit
  - Meeting loss on sale of a fixed asset
  - None of the above. (1 mark each)

(c) Re-write the following sentences after filling-in the blank spaces with appropriate word(s)/figure(s):

- Shares forfeited account is to be shown in the balance sheet by way of \_\_\_\_\_ to the paid-up share capital on the liabilities side until the concerned shares are re-issued.
- International Accounting Standards (IAS)/International Financial Reporting Standards (IFRS) are issued by the \_\_\_\_\_ .
- Unless loss prior to incorporation is completely written off, it must be shown as an asset in the assets side of the balance sheet under the heading \_\_\_\_\_ .
- According to section 209(4A) of the Companies Act, 1956, a company must preserve its books of account and its relevant vouchers for a minimum period of \_\_\_\_\_.
- A company cannot issue redeemable preference shares for a period exceeding \_\_\_\_\_. (1 mark each)

2. (a) The balance sheets of H Ltd. and its subsidiary S Ltd. as on 31<sup>st</sup> March, 2011 are as follows :

<i>Liabilities</i>	H Ltd. (₹)	S Ltd. (₹)
Equity shares of ₹100 each	30,00,000	15,00,000
General reserve (1 <sup>st</sup> April, 2010)	8,00,000	4,00,000
Profit and loss account (1 <sup>st</sup> April, 2010)	2,00,000	2,50,000
Net profit for the year	6,00,000	4,00,000
15% Debentures	10,00,000	—
Creditors	4,00,000	2,70,000
Bills payable	<u>60,000</u>	<u>30,000</u>
	<u>60,60,000</u>	<u>28,50,000</u>
 <i>Assets</i>		
Premises	14,00,000	9,00,000
Machinery	12,00,000	7,00,000

Investment in shares of S Ltd.	17,00,000	—
Inventories	7,00,000	4,50,000
Debtors	5,00,000	4,20,000
Bills receivable	1,80,000	80,000
Cash and bank	3,80,000	2,00,000
Misc. expenditure	—	1,00,000
	<u>60,60,000</u>	<u>28,50,000</u>

The following are the additional information:

- (i) H Ltd. acquired 12,000 equity shares in S Ltd. on 1<sup>st</sup> April, 2010.
- (ii) Bills receivable of H Ltd. include ₹30,000 accepted by S Ltd.
- (iii) Accounts receivable of H Ltd. include ₹1,00,000 due from S Ltd.
- (iv) Inventories of S Ltd. include goods purchased from H Ltd. for ₹1,25,000 which were invoiced by H Ltd. at a profit of 25% on cost.
- (v) Both H Ltd. and S Ltd. have proposed 10% dividend for the year 2010-11 but no effect has been given in the balance sheets.

Prepare a consolidated balance sheet giving proper working notes.

(11 marks)

- (b) What do you mean by 'profits prior to incorporation'? How such profits are apportioned and utilised? (4 marks)

3. (a) On 1st April, 2010, Rosy Ltd. issued 20,000, 13% debentures of ₹100 each at 5% discount. Debentureholders have an option to convert their holdings in 14% preference shares of ₹100 each at a premium of ₹25 per share. On 31st March, 2011, one year's interest has accrued on these debentures and has remained unpaid. A holder of 100 debentures notified his intention to convert his holdings in 14% preference shares. Journalise these transactions. Also show workings for number of preference shares to be issued in exchange. (7 marks)

- (b) Reliable Ltd. furnishes you with following balance sheet as on 31<sup>st</sup> March, 2011 :

*Balance Sheet*

<i>Liabilities</i>	₹ in Crores
Share capital :	
12% Redeemable preference shares @ ₹100 each, fully paid-up	75
Equity shares of ₹10 each, fully paid-up	25
Reserves and surplus:	
Capital reserve	15
Securities premium	25
Revenue reserve	260
Current liabilities and provisions:	
Current liabilities	<u>40</u>
	<u>440</u>

Assets	₹ in Crores	
Fixed assets	100	
Less provision for depreciation	<u>100</u>	Nil
Investments (Market value ₹400 crore)		100
Current assets		<u>340</u>
		<u>440</u>

The company redeemed preference shares on 1<sup>st</sup> April, 2011. It also bought back 50 lakh equity shares of ₹10 each at ₹50 per share. The payment for the above are made out of the huge bank balance, which appeared as a part of current assets.

Make journal entries to record the above and prepare balance sheet as on 1<sup>st</sup> April, 2011 after redemption of preference shares and buy-back of equity shares. (8 marks)

4. (a) The balance sheet of Ashoka Ltd. as on 31<sup>st</sup> March, 2011 was as follows :

Liabilities	₹	Assets	₹
Share Capital :		Sundry assets	17,00,000
Authorised :			
1,50,000 Equity shares			
of ₹10 each	15,00,000		
Issued, subscribed, called-up			
and paid-up :			
80,000 Equity shares of ₹7.50			
per share called and paid-up	6,00,000		
Reserves and surplus:			
Capital redemption reserve	1,50,000		
Plant revaluation reserve	20,000		
Securities premium	1,50,000		
Development rebate reserve	2,30,000		
Investment allowance reserve	2,50,000		
General reserve	<u>3,00,000</u>		
	<u>17,00,000</u>		<u>17,00,000</u>

The company wanted to issue bonus shares to its shareholders at the rate of one share for every two shares held. Necessary resolution was passed. Give necessary journal entries and prepare amended balance sheet. (6 marks)

- (b) Write short notes on **any three** of the following:
- (i) Provision for taxation and advance payment of tax
  - (ii) Purposes of valuation of shares
  - (iii) Fair value of shares
  - (iv) Capitalisation of profits and reserves. (3 marks each)

**PART—B**

*(Answer Question No.5 which is compulsory and **any two** of the rest from this part.)*

5. (a) State, with reasons in brief, whether the following statements are true or false:
- (i) Semi-variable costs are ignored in marginal costing.
  - (ii) 'Cost volume profit relationship' is a more comprehensive term than 'break-even analysis'.
  - (iii) Sunk costs are not relevant for decision-making.
  - (iv) 'Costing' and 'cost accounting' are the same.
  - (v) High wages means high cost of production. *(2 marks each)*
- (b) Write the most appropriate answer from the given options in respect of the following:
- (i) Opportunity cost helps in —
    - (a) Ascertainment of cost
    - (b) Controlling cost
    - (c) Making managerial decisions
    - (d) None of the above.
  - (ii) Fixed cost per unit increases when —
    - (a) Production volume decreases
    - (b) Production volume increases
    - (c) Variable cost per unit decreases
    - (d) Variable cost per unit increases.
  - (iii) The costing method in which fixed factory overheads are added to inventory is —
    - (a) Direct costing
    - (b) Marginal costing
    - (c) Absorption costing
    - (d) Activity based costing.
  - (iv) Cash flow statement is required for the financial planning of —
    - (a) Short range
    - (b) Long range
    - (c) Medium range
    - (d) Very long range.
  - (v) The type of spoilage that does not affect the cost of inventories is —
    - (a) Normal spoilage
    - (b) Standard spoilage

- (c) Abnormal spoilage  
(d) Seasonal spoilage. (1 mark each)
- (c) Re-write the following sentences after filling-in the blank spaces with appropriate word(s)/figure(s):
- (i) At break-even point, the contribution will be equal to \_\_\_\_\_ .
- (ii) \_\_\_\_\_ is a budget designed to furnish budgeted costs for any level of activity actually attained.
- (iii) A current ratio of less than one implies that the working capital is \_\_\_\_\_ .
- (iv) The process of physical verification of stores throughout the year is known as \_\_\_\_\_.
- (v) In contract costing, the cost unit is a \_\_\_\_\_. (1 mark each)

6. (a) The balance sheets of X Ltd. as on 31<sup>st</sup> March, 2010 and 31<sup>st</sup> March, 2011 were as follows:

<i>Liabilities</i>	As on 31 <sup>st</sup> March, 2010 (₹)	As on 31 <sup>st</sup> March, 2011 (₹)
Share capital	5,00,000	7,00,000
General reserve	50,000	70,000
Profit and loss account	1,00,000	1,60,000
Sundry creditors	1,53,000	1,90,000
Bills payable	40,000	50,000
Outstanding expenses	<u>7,000</u>	<u>5,000</u>
	<u>8,50,000</u>	<u>11,75,000</u>
<i>Assets</i>		
Land and building	80,000	1,20,000
Plant and machinery	5,00,000	8,00,000
Stock	1,00,000	75,000
Sundry debtors	1,50,000	1,60,000
Cash	<u>20,000</u>	<u>20,000</u>
	<u>8,50,000</u>	<u>11,75,000</u>

Additional information:

- (i) ₹50,000 depreciation has been charged to plant and machinery during the year 2011.
- (ii) A piece of machinery costing ₹12,000 (depreciation provided thereon ₹7,000) was sold at 60% profit on book value.

You are required to prepare cash flow statement.

(8 marks)

- (b) From the following information, calculate economic order quantity (EOQ) and the number of orders to be placed in one quarter of the year :
- (i) Quarterly consumption of material : 2,000 kg.
- (ii) Cost of placing one order : ₹50
- (iii) Cost per unit : ₹40

(iv) Storage and carrying cost : 8% on average inventory. (3 marks)

(c) What are the components of total cost shown in the cost sheet? Give the uses of the cost sheet. (4 marks)

7. (a) The cost accountant of Raman Ltd. has computed labour turnover rates for the quarter ended 31st March, 2011 as 10%, 5% and 3% under flux method, replacement method and separation method respectively.

If the number of workers replaced during the quarter is 30, find out the number of —

(i) Workers recruited and joined; and

(ii) Workers left and discharged. (6 marks)

- (b) The monthly budgets for the manufacturing overheads of a concern for two levels of activity were as follows:

Capacity	60%	100%
Budgeted production ( <i>Units</i> )	600	1,000
	₹	₹
Wages	1,200	2,000
Consumable stores	900	1,500
Maintenance	1,100	1,500
Power and fuel	1,600	2,000
Depreciation	4,000	4,000
Insurance	<u>1,000</u>	<u>1,000</u>
	<u>9,800</u>	<u>12,000</u>

You are required to —

(i) Indicate which of the items are fixed, variable and semi-variable;

(ii) Prepare a budget for 80% capacity; and

(iii) Find total cost, both fixed and variable costs per unit of output at 60%, 80% and 100% capacity. (6 marks)

- (c) Briefly point out the process of budgetary control. (3 marks)

8. (a) From the following information pertaining to ABC Ltd., prepare its trading, profit and loss account for the year ended 31st March, 2011 and summarised balance sheet as at that date :

Current ratio = 2.5

Quick ratio (quick assets/quick liabilities) = 1.3

Proprietary ratio (fixed assets/proprietary funds) = 0.6

Gross profit to sales ratio = 10%

Debtors velocity = 40 days

Sales = ₹7,30,000

Working capital = ₹1,20,000

Bank overdraft = ₹15,000

Share capital = ₹2,50,000

Closing stock = 10% more than opening stock

Net profit = 10% of proprietary funds.

(9 marks)

- (b) A company has annual fixed cost of ₹1,68,00,000. In the year 2010-11, sales amounted to ₹6,00,00,000 as compared with ₹4,50,00,000 in the preceding year 2009-10. The profit in the year 2010-11 is ₹42,00,000 more than that in 2009-10. On the basis of the above information, answer the following:

- (i) What is the break-even level of sales of the company?
- (ii) Determine profit/loss on the forecast of a sales volume of ₹8,00,00,000.
- (iii) If there is a reduction in selling price by 10% in the financial year 2011-12 and company desires to earn the same amount of profit as in 2010-11, what would be the required sales volume?

(6 marks)

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