01 A bit pattern is shown in **Figure 1**.

Figure 1

```
00100101
```

01.1 Convert the bit pattern shown in **Figure 1** into decimal.

[1 mark]

……..

01.2 Convert the bit pattern shown in **Figure 1** into hexadecimal. You should show your working.

[2 marks]

……..

……..

……..

Answer: ……..

01.3 What is the result of applying a left binary shift of two to the bit pattern shown in **Figure 1**? Express your answer as an 8 bit binary bit pattern.

[1 mark]

……..

01.4 Describe the arithmetic effect of a right binary shift of one on any bit pattern.

[1 mark]

……..

02 Add together the following three binary numbers and give your answer in 8 bit binary

[2 marks]

```
  00100010
  00101110
+ 01000011
```

……..

03 Write down the largest decimal number which can be represented using an 8 bit binary number.

[1 mark]

……..

04 Dominic has an image file saved on his computer. The image file has a size of 24,000 bits.

04.1 What is 24,000 bits in KiloBytes? You should show your working.

[2 marks]

……..

……..

……..

Answer: ……..

04.2 How many KiloBytes are there in a MegaByte?

[1 mark]

……..

04.3 Dominic has another file on his computer which is 4 GigaBytes in size. What is the size of the file in MegaBytes?

[1 mark]

……..

……..

05 Computer scientists sometimes use hexadecimal numbers.

05.1 Convert the hexadecimal number `4B` to decimal. You should show your working

[2 marks]

……..

……..

……..

Answer: ……..

05.2 Explain why hexadecimal numbers are used by computer scientists.

[2 marks]

……..

……..

……..