

**01.1** Convert the binary number 11010111 into decimal.

**[1 mark]**

215 (128 + 64 + 16 + 4 + 2 + 1)

**01.2** Convert the decimal number 199 into binary. Write your answer as an 8-bit binary number.

**[1 mark]**

11000111

**01.3** State how many decimal numbers can be represented using 5 bits.

**[1 mark]**

32 or  $2^5$

**01.4** State the range of decimal numbers that can be represented using 7 bits.

**[1 mark]**

0-127 or 0 to  $2^7-1$

**02.1** Convert 12,000 kilobytes (kB) to megabytes (MB).

**[1 mark]**

12 (just 12 is fine – the question gives you the units)

**02.2** Convert 8 gigabytes (GB) to kilobytes (kB).

**[1 mark]**

8,000,000

**02.3** A file has a size of 4 kilobytes. How many bits are there in 4 kB? Show your working.

**[2 marks]**

4 kb = 4 x 1000 Bytes = 4,000 [1 mark for multiplying by 1000]

4,000 Bytes = 4,000 x 8 bits = 32,000 bits [1 mark for multiplying by 8]

Answer: 32,000 [1 mark for correct answer if no valid working shown]

**02.4** Which is bigger, 12,000,000kB or 1.2GB?

**[1 mark]**

12,000,000 kB = 12,000 MB = 12 GB

So, 12,000,000 kB (or 12 million kB) is bigger [1 mark for correct answer – no need to show working]