Do not Google answers – use the syllabus definitions where needed. The ones you get from Google are too complex and don't apply to a GCSE course properly

01 Convert the decimal number `121` into binary. Write your answer as an 8-bit binary number.

[1 mark]

01111001

02 Convert the hexadecimal number `3C` into binary. Write your answer as an 8-bit binary number.

[2 marks]

0011 on left [1]; C = 12 = 1100 on right [1]

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

[2 marks]

```
  10110001
  00010011
+ 00100101
  11101001
```

One mark for each half

04 State the arithmetic effect of applying a left binary shift of three to a binary number.

[1 mark]

multiply by 8/x2x2x2/double three times/double then double then double – any of these acceptable

05 Define the term **sampling resolution** in the context of representing sound digitally.

[2 marks]

From syllabus 3.3.7 – third row: number of bits [1] per sample [1]

06 Define the term **colour depth** in the context of representing images digitally.

[2 marks]

From syllabus 3.3.6 – second row: number of bits [1] used to represent each pixel [1] or used to represent colour for each pixel [1]

07 The keyboard character **&** (an ampersand) is represented in ASCII code as 038. What will its representation be in Unicode? Do not Google this – syllabus knowledge point from Unit 3.3.5

[1 mark]

From syllabus 3.3.5 – last point, left column: Unicode and ASCII code use the same values. So answer is: 038 [1] 38 is fine