01 Convert the binary number `00111010` into decimal.

[1 mark]

58

02 Binary is base 2. What number base is hexadecimal?

[1 mark]

16

03 Apply a binary shift two places to the left to the bit pattern `00101111`

[1 mark]

10111100

03.2 State the arithmetic effect of applying a right binary shift of two to a binary number

[1 mark]

Quarter it [1] Divide by 4 [1] Divide by 2 and then divide by 2 again [1]

04.1 Convert the hexadecimal number 8E into binary. You should show your working

[2 marks]

8 = 1000 E = 14 = 1110

Answer: 10001110

1 mark for 1000 on left; 1 mark for 1110 on right

04.2 Convert the binary number 01111011 into hexadecimal. You should show your working

[2 marks]

0111 = 7 1011 = 11 = B

Answer: 7B

One mark for 7; one mark for B

04.3 Convert the hexadecimal number 2B into decimal. You should show your working

[2 marks]

2 x 16 = 32 B = 11 [1 mark for valid working for either half]

Answer: 32 + 11 = 43

04.4 What is the largest hexadecimal number that can be represented in binary using 8 bits

[1 mark]

FF