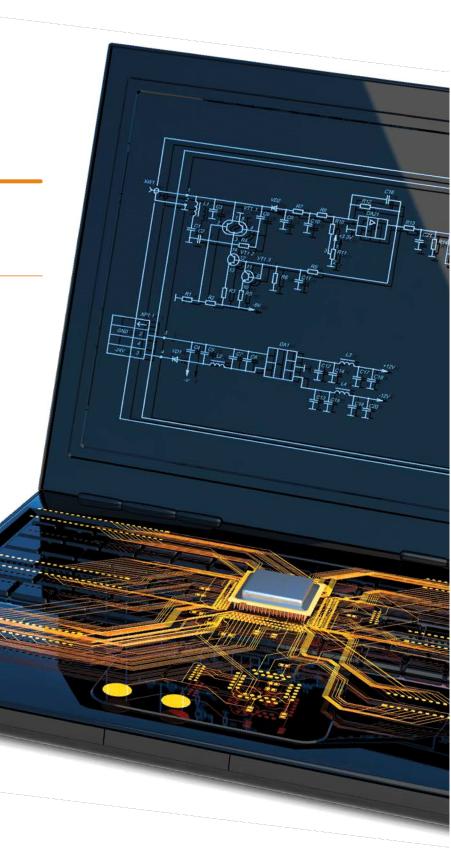




GCSE COMPUTER SCIENCE

GCSE (8520)

UNIT 3.2



3.2 Converting between number bases

Content	Additional information
Understand how binary can be used to represent whole numbers.	Students must be able to represent decimal values between 0 and 255 in binary.
Understand how hexadecimal can be used to represent whole numbers.	Students must be able to represent decimal values between 0 and 255 in hexadecimal.
Be able to convert in both directions between: • binary and decimal • binary and hexadecimal • decimal and hexadecimal.	The following equivalent maximum values will be used: • decimal: 255 • binary: 1111 1111 • hexadecimal: FF

SPECIMEN MATERIAL 2015

0 1	A bit pattern is shown in Figure 1 .	
	Figure 1	
	01001110	
0 1 . 1	Convert the bit pattern in Figure 1 into decimal.	[1 mark]

0 1 . 2	Convert the bit pattern in Figure 1 into hexadecimal.	[2 marks]

SPECIMEN PAPER 1 SUPPLEMENTAL MATERIAL 2015

1 (a)	State the denary representation of the binary number 10010111 [1 mark]
1 (b)	State the hexadecimal representation of the denary number 125. You must show your working. [2 marks]
	•
1 (d)	The ASCII character set uses seven bits to encode every character.
	What is the total number of characters that can be encoded in ASCII? [1 mark]

1 (a)	State the denary representation of the binary number 10111010. [1 mark]
1 (b)	State the hexadecimal representation of the binary number 1110. [1 mark]
1 (c)	State the denary representation of the hexadecimal number 4C. You must show your working. [2 marks]
1 (a)	State the binary representation of the denary number 87. [1 mark]
1 (b)	State the binary representation of the hexadecimal number CE. You must show your working. [2 marks]

1 (c)	Place these three numbers into order of size smallest).	(1–3 where 1 is t	he largest and 3 is the
	Number	Order (1-3)	
	The denary number 12		
	The binary number 1110		
	The hexadecimal number D		
			[2 marks]
1 (d)	What is the minimum number of bits needed a character set that contains only the 26 lower	_	_
2 (d)	How many bits does ASCII use to represent a	single character?	[1 mark]

PAPER 2 JUNE 2018

0 1	A bit pattern is shown in Figure 1.	
	Figure 1	
	10011100	
0 1.1	Convert the bit pattern shown in Figure 1 into decimal. [1 mark]	
0 1.2	Convert the bit pattern shown in Figure 1 into hexadecimal. You should show your working. [2 marks]	
	Answer:	

PAPER 2 2019

0 1.1	Convert the decimal number 197 into binary.	[1 mark]
0 1.2	Convert the hexadecimal number A4 into decimal.	
	Show your working.	[2 marks]
	Answer	