1.4 Binary Representation Questions

1.

i. Convert the denary number **189** to an 8 bit binary number.

[1]

ii. Convert the unsigned binary number **10101011** to denary.

[1]

2.

i. Convert the denary number 230 to an unsigned 8-bit binary number.

[1]

ii. Convert the denary number 21 to an unsigned 8-bit binary number.

[1]

3.

i. Convert the denary number 119 to an 8-bit binary number.

[1]

ii. Convert the unsigned binary number 1101101 to denary.

[1]

iii. Convert the denary number 171 to denary.

[1]

iv. Convert the binary number 10111100 to denary.

[2]

4(a).

i. Convert the denary number 168 to an unsigned 8-bit binary number.

[1]

ii. Convert the binary number 10000100 to denary.

[1]

5. Give the number 55 in binary as an 8-bit unsigned binary number.

[2]

6. A local supermarket uses a stock control system.

Details of their products are stored on a database.

The quantity of a particular product in stock is stored as a binary number using two bytes.
There are 305 cans of cola left in stock.

How would this quantity be represented as a binary number in the computer?

[2]

7(a).

Change the denary number 89 into the following representations.

i. An 8 bit binary number.

[1]

ii. A binary number using the least number of bits.

[1]

8(a). Convert the unsigned binary number 11100000 to:

i. Denary:

[1]

9. Convert the denary number 135 into an 8-bit binary number.

[2]

10. Convert the denary number 43 into an 8 bit binary number.

[1]

END OF QUESTIONS

Mark scheme

Question			Answer/Indicative content	Marks	Guidance
1		i	• 10111101	1	
		ii	• 171	1	
			Total	**2**	
2		i	11100110	1	
		ii	00010101	1	
			Total	**2**	
3		i	01110111	1	Correct answer only
		ii	109	1	Correct answer only
		iii	10101011	1	Correct answer only
		iv	188	1	Correct answer only
			Total	**4**	
4	a	i	10101000	1	
		ii	132	1	
			Total	**2**	
5			00110111 (1 mark per nibble)	2	
			Total	**2**	
6			• 0000000100110001	2	1 for correct binary, 1 for 16 digits.
			Total	**2**	
7	a	i	01011001	1	
		ii	1011001	1	
			Total	**2**	
8	a	i	224	1	
			Total	**1**	
9			10000111	1	
			Total	**1**	
10			00101011	1	

			Total	**1**	