



## 1.4 Binary Representation Questions

1.

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

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[1]

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

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[1]

2.

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

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[1]

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

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[1]





## 1.4 Binary Representation Questions

3.

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

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[1]

- ii. Convert the unsigned binary number 1101101 to denary.

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[1]

- iii. Convert the denary number 171 to denary.

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[1]

- iv. Convert the binary number 10111100 to denary.

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[2]

4(a).

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

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## 1.4 Binary Representation Questions

[1]

- ii. Convert the binary number 10000100 to denary.

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[1]

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

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[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?

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[2]

7(a).

Change the denary number 89 into the following representations.

- i. An 8 bit binary number.





## 1.4 Binary Representation Questions

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[1]

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

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[1]

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

- i. Denary:

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[1]

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

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[2]

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

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[1]

END OF QUESTIONS





## 1.4 Binary Representation Questions

### Mark scheme

Question			Answer/Indicative content	Marks	Guidance
1		i	<ul style="list-style-type: none"> <li>10111101</li> </ul>	1	
		ii	<ul style="list-style-type: none"> <li>171</li> </ul>	1	
			<b>Total</b>	<b>2</b>	
2		i	11100110	1	
		ii	00010101	1	
			<b>Total</b>	<b>2</b>	
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
			<b>Total</b>	<b>4</b>	
4	a	i	10101000	1	
		ii	132	1	
			<b>Total</b>	<b>2</b>	
5			00110111 (1 mark per nibble)	2	
			<b>Total</b>	<b>2</b>	
6			<ul style="list-style-type: none"> <li>0000000100110001</li> </ul>	2	1 for correct binary, 1 for 16 digits.
			<b>Total</b>	<b>2</b>	
7	a	i	01011001	1	
		ii	1011001	1	
			<b>Total</b>	<b>2</b>	
8	a	i	224	1	
			<b>Total</b>	<b>1</b>	
9			10000111	1	
			<b>Total</b>	<b>1</b>	





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10			00101011	1	
			<b>Total</b>	<b>1</b>	

