2.9 Trace Tables and Binary/Hex Conversions: 10-minute Pack

Total Marks

OCR J277 · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Convert each of the following denary numbers to an 8 bit binary number.

(a) Convert 122 to an 8 bit binary number. Show your working. **(2)**

(b) Convert 201 to an 8 bit binary number. Show your working. **(2)**

(Total for Question 1 is 4 marks)

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2 A simple character set assigns the letter 'A' the ASCII decimal code 65, with the remaining capital letters following on in alphabetical order.

(a) Calculate the ASCII decimal code for the capital letter 'M'. **(2)**

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(b) The word 'REVISE' is stored using 8 bit ASCII, with one byte used per character. Calculate the total number of bits needed to store the word. **(2)**

.....

(Total for Question 2 is 4 marks)

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Mark scheme · 2.9 Trace Tables and Binary/Hex Conversions: 10-minute Pack

Question 1

(a) Correct place values selected that total 122 (64, 32, 16, 8, 2), oe	**M1**
(a) 01111010, cao	**A1**

(a) Answer: 01111010

(b) Correct place values selected that total 201 (128, 64, 8, 1), oe	**M1**
(b) 11001001, cao	**A1**

(b) Answer: 11001001

Question 2

(a) correct offset identified, e.g. 'M' is the 13th letter of the alphabet, so the offset from 'A' is 12, oe	**M1**
(a) 77, cao	**A1**

(a) Answer: 77

(b) 6 characters identified and multiplied by 8 bits, oe	**M1**
(b) 48, cao	**A1**

(b) Answer: 48 bits

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