MODULE C DATA REPRESENTATION · C4

Converting binary and hexadecimal

Original practice questions · 20 marks · ~25 minutes · Cambridge 0478 syllabus 1.1.2(b)(iii)

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. No calculator. Binary numbers are up to 16 bits and hexadecimal numbers up to 4 digits. Give binary answers with the number of bits asked for. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**.

1

Total: 2 marks

(a) State how many bits are represented by **one** hexadecimal digit. **[1]**

(b) State how many hexadecimal digits are needed to represent a 16-bit binary number. **[1]**

2

Total: 6 marks

A network switch stores its settings as binary values.

(a) Convert the 8-bit binary value 1100 1010 into hexadecimal. **[2]**

Answer: .....

(b) Convert the 16-bit binary value 0011 1110 1000 0101 into hexadecimal. Show your working. **[4]**

Answer: .....

3 Total: 6 marks

(a) Convert the hexadecimal value 9F into 8-bit binary. **[2]**

Answer: .....

(b) Convert the hexadecimal value 2B0D into 16-bit binary. Show your working. **[4]**

Answer: .....

4 Total: 2 marks

A technician converts the 16-bit binary value 1101 0000 1010 0011 from an error log and writes the hexadecimal value as **DA3**.

(a) Identify the mistake the technician has made. **[1]**

(b) Give the correct hexadecimal value. **[1]**

Answer: .....

5 Total: 4 marks

(a) Complete the table by writing the missing binary or hexadecimal value in each gap. **[4]**

Binary	Hexadecimal
0110 1111	
(8 bits)	B4
0001 0010 1100 1110	
(16 bits)	8E07

Total for this worksheet: 20 marks