0478 and 0984(9-1)
COMPUTER SCIENCE
TOPIC MARK SCHEMES SET-6
SMART EXAM RESOURCES
Unit 1.1 Number Systems

ANSWER 1(a)   (0)1101011   Unit 1.1 Number Systems   1

ANSWER 1(b)

000 100101100 1 mark for three leading zeros, 1 mark for correct binary number	2

ANSWER 1(c)

B3 1 mark for each correct character	2

ANSWER 2(a)

1 mark for each correct line (to a maximum of 5)	5

Answer 2(b)

Two from: ☐ It makes the values easier to read/write/understand/debug ☐ It is a shorter way to represent the values	2

ANSWER 3(a)

1 mark for each correct 8-bit binary number	3

66	0	1	0	0	0	0	1	0
85	0	1	0	1	0	1	0	1
83	0	1	0	1	0	0	1	1

ANSWER 3(b)(i)

1 mark for each correct hexadecimal number 4B 45 59	3

ANSWER 3(b)(ii)

Three from: ☐ (HTML) colour codes ☐ Error messages ☐ MAC addresses ☐ IP addresses ☐ Assembly language ☐ Memory dump ☐ Locations in memory	3

ANSWER 3(b)(iii)

Two from: ☐ Easier to read/write/understand (for humans) ☐ Easier to remember (for humans) ☐ Short way to represent binary // Uses less **screen/display** space ☐ Fewer errors made (in data transcription) ☐ Easier to debug (for humans)	2

ANSWER 4(a)

1 mark for each correct conversion				3
01101010	11111111	00001000	10010011	

ANSWER 4(b)

☐ Computers use switches / logic gates ☐ Only uses 2 states / On or Off / 1 or 0	2

ANSWER 5(a)

Denary – 55 Hexadecimal – 37	**2**

ANSWER 5(b)

Binary – (00)111001 Denary – 57 Hexadecimal – 39	3

ANSWER 6(a)

	6
1 mark for appropriate use and 1 mark for suitable example for up to three uses e.g. ☐ HTML colours ☐ e.g. blue `0000FF` ☐ Display machine code/programs/memory dump ☐ e.g. `5F 3A 09 F1` ☐ Display (MAC) addresses ☐ e.g. `01-23-45-67-89-AB-CD` ☐ Display ASCII/Unicode values ☐ e.g. `%41` for A ☐ Display error codes ☐ e.g. error #404 page not found	

ANSWER 6(b)

	2
Any **two** from: ☐ easier for programmers to read and understand ☐ easier to find errors ☐ conversion to binary easier than denary to binary ☐ more can be displayed on a screen for addresses etc. // smaller display screens can be used ☐ faster than binary for entering numbers	