## 0478 and 0984(9-1) COMPUTER SCIENCE TOPIC QUESTIONS SET-4 SMART EXAM RESOURCES

Unit 1.1 Number Systems

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1. (a) Four denary to 8-bit binary conversions are given.

Tick ( $\checkmark$ ) to show if each denary to 8-bit binary conversion is **Correct** or **Incorrect**.

Denary	Binary Conversion	Correct (√)	ncorrect (√)
145	10010001		
179	10110101		
11	00010011		
100	01100010		

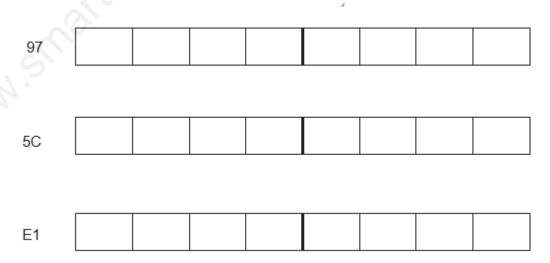
## Unit 1.1 Number Systems

2.	A long-distance running who finishes the race.		uses an e	electroni	c counter	that co	unts each	competitor	
(i)	The count is stored as A denary value of the The screen currently of	count is	s displaye	_		ove the	finish line		
	SILLE	0	0	3	9				
	State the binary value t								
	(ii) More competitors of	ross the	finish lin	e and th	e screen			[2	J
	State the binary value t		3 urrently s			ne count	t shown.		
								[2	
	(iii) At the end of the ra	ce the bi	•	ue store	d is:				
	Give the denary value s	that wou	ld be dis	played o	on the scr	een at tl	he end of t	he race.	
								[2	2]
							7		

- 3. Hexadecimal is used for MAC addresses
- (a) Part of a MAC address is given:

Each pair of digits is stored as binary in an 8-bit register.

Show what the binary register stores for each pair of the given digits.



Example 1	
Example 2	
	[2]

4. Victoria is building a website for her cake design business.
She uses the hexadecimal colour code #D2E3F5 as the background colour for her website. The colour code is stored in two 12-bit binary registers.

Show how the code would be stored in the registers

D2E						
3F5						

- **5.** An electronic guessing game compares denary integer values input by a user with prestored values. The pre-stored values are held in 10-bit binary format.
- (a) Convert the binary values in the table to denary.

Binary	Denary
0001001110	
0110110111	
100000001	

(b)	When planning the game, the designer decided to use hexadecimal notation to represent the binary values.	[3]
	Explain why the designer used hexadecimal notation.	
		[2]
(c)	State the hexadecimal equivalent of the binary value 1010110101	
		[3]

## Unit 1.1 Number Systems

	0	0	1	1	0	1	0	0	
L									
(a) Conv	vert the bi	nary valu	ue to dena	ary.					
									[4]
									[1]
(b) The	contents o	of the reg	gister shif	ted one	place to	the right	would gi	ve the res	sult:
		0	0	0	1	1	0	1	0
The content	s of the re	egister sh	nown at th	ne start c	of questi	on 4 are	shifted tv	vo places	to the
left. Show th	ne content	s of the	register a	fter this	shift has	s taken p	lace.		
L		L		L			I		[1]
(c) State	e the effec	ct this shi	ift has on	the dena	ary valu	e in <b>part</b>	(a).		