Victoria University of Bangladesh

Department of Computer Science & Engineering

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Mid Term Assessment

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Course code: CSE-213

Course Title: Digital Logic Design.

Answer to the question no: 1(a)

1.(a) Ans: Defining DLD: Digital logic is the basic of electronics system such as computers & cell phones. Digital logic noted in binary code, a series of zeros & one each having an opposite value. The system facilities the design of electronic circuits that convay information including logic gate. Function include and, or, and not. The value system translate input signals into specific Application.

#DLD list the fields:

① AND ⟶ 

② OR ⟶ 

③ NOT ⟶ 

④ NAND ⟶ 

⑤ XOR ⟶ 

#=DLD List field: Digital logic design is functional to the fields of electrical engineering & computer engineering. Digital logic design build complex electronics computers that use both electricle & computational characteristics. These characteristics may involve power, current logical functions, protocol & user input. Digital logic design is used to develop hardware, such as circuit boards & microchip processor. This hardware Processor user input, system protocol & other datain computers navigational system, cell phones, or other high-tech system.

Answer to the question no: 1(b)

1. (b) Ans: Advantage of DLD: The advantage of using a ROM is this way is that any conceivable function of the inputs can be made to apper at any of the output. Making they general purpose. Combinational logic device avalie.

High accuracy & programbiliety.
Storage of digital data is easy.
Immune to noise.
Can be implemented in the foram of intergrated circuits.
Creator reliabiliety & flexibiliety.
They are usally much slower than dedicated logic circuits.
They consome more.

Answer to the question no: 2 (a)

2.(a) Ans: Converting the number:

$(715)_{10} = (?)_8$

$= (1295)_8$ Ans:

8 | 715	
8 | 89	−5
8 | 10	−9
8 | 1	−2
	0 − 1

$= 1295$

2.(b) Ans: $(Ac09)_{16} = (?)_{10}$

We know,

$A = 10$

$B = 11$

$C = 13$

$= (A \times 16) + (C \times 16) + (0 \times 16) + (9 \times 16)$

$= 10 \times 16^3 + 13 \times 16^2 + 0 \times 16^1 + 9 \times 16^0$

$= 10 \times 4096 + 13 \times 256 + 0 + 9 \times 1$

$= 40960 + 3328 + 9$

$= 44297$

$\Rightarrow (Ac09)_{16} = (44297)_{10}$ Ans:

2. (c) Ans: $(100011)_2 \rightarrow (?)_{10}$

$= 1\times2^5 + 0\times2^4 + 0\times2^3 + 0\times2^2 + 1\times2^1 \times 1\times2^0$

$= 1\times32 + 0 + 0 + 0 + 2 + 1$

$= 32 + 2 + 1$

$= 35$

$\Rightarrow (100011)_2 = (35)_{10}$ Ans:

2. (d) Ans: $(12435)_8 \Rightarrow (?)_{10}$

$= 1\times8^4 + 2\times8^3 + 4\times8^2 + 3\times8^1 + 5\times8^0$

$= 4096 + 1024 + 256 + 24 + 5$

$= 5405$

$\Rightarrow (12435)_8 = (5405)_{10}$

Ans:

Answer to the question no: 3(a)

3.(a) Ans: Defining the example of LSB & MSB—

#MSB: MSB stands for most significant bit while MSB is cost significant bit. In binary terms. The MSB is the 8 bit that has the greatest effect on the number & it is the left-most bit.

#For Example: For a binary number 00110101. The most significant 4 bits would be 0011. The most significant 4 bit would be 0101.

#LSB: Least-significant bit of a binary number the LSB is the least weighted bit in the number.

Parameter	CCMSB	CCLSB	Values
Gain	16	48	
Low	17	49	
Mid Freq	18	50	
Mid	19	51	
high	20	52	
level	21	53	
Expression	4	36	
" Mid	1	33	

Answer to the question no: 2(b)

3.(b) Ans: Converting the number:

(i) $(37)_{10} = (?)_6$

$= (37)_{10} = (101)_6$ Ans.

6 | 37
6 | 6 - 1
6 | 1 - 0
0 - 1

$= 101$

(ii) $(53)_6 = (?)_{10}$

$= 5 \times 6^1 + 3 \times 6^0$

$= 30 + 3$

$= 33$

$\Rightarrow (53)_6 = (33)_{10}$

(iii) $(10762)_8 = (?)_{16}$

$= 1 \times 8^4 + 0 \times 8^3 + 7 \times 8^2 + 6 \times 8^1 + 2 \times 8^0$

$= 4096 + 0 + 448 + 48 + 2$

$= 4594$

$\Rightarrow (10762)_8 = (4594)_{16}$ Ans.

P.t.o.

3. (b) (iv) $(AB9EF)_{16} = (?)_8$

$= A \times 16 + B \times 16 + 9 \times 16 + E \times 16 + F \times 16$

$= 10 \times 16^4 + 11 \times 16^3 + 9 \times 16^2 + 14 \times 16^1 + 15 \times 16^0$

$= 655360 + 45056 + 2304 + 224 + 15$

$= 702959$

$\Rightarrow (AB9EF)_{16} = (702959)_8$ Ans

We Know that

A = 10
B = 11
C = 12
D = 13
E = 14
F = 16