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Course: CSE-213 - Digital Logic Design.

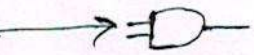
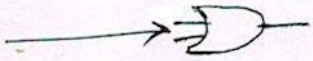
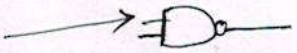
8th Batch

CSE

Ans: to the: Q: NO: 01

(a) Ans: Defining DLD:- Digital Logic is the basic of electronic system- such as computers & cell phones. Digital logic is rooted in binary code. a series of zeros & One each having an opposite value. The system facilities the design of electronic circuits that convey information including logic gate. function include & andorand 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 foundational to the fields of electrical engineering & computer

P.T.O.

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engineering. Digital logic designers Build Complex electronic components that use both electricle & computational characteristics. These characteristrics may involve power, current, logical functions, protocal & user input Digital logic Design is used to develop Hardware, such as circuit Boards & microchip processor. This Hardware processor user input, system protocal & other datain Computers, Navigational systems, cell phones or other high-tech system.

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1/(b) Advantage of DLD: The Advantage of using a ROM in this way is that any conceivable function of the m inputs can be made to apper at any of the Output. Maling the general purpose. combinatorial logic device availe.

→ High Accuracy & programmábilitiy.

→ Storage of Digital data is easy.

→ Immune to noise.

→ can be implemented in the form of intergnated cinetes.

→ Greater reliability & flexibility.

→ They are usually much slower then dedicated logic cinetes.

→ They consome more.

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Ans: to the Q: no: 02

Converting the number:

(a) Ans: $(715)_{10} = (?)_8$

$= (1295)_8$ Ans:

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

$= 1295$

(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: $(100011)_2 = (?)_{10}$

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

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

$= 32+2+1$

$= 35$

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

(d) Ans: $(12435)_8 = (?)_{10}$

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

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

$= 5405$

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

Ans:

Ans: to the Q: NO: 03

(a) Ans: Defining the example of LSB & MSB -

MSB: MSB stands for most significant bit. while LSB is least significant bit. In binary terms, the MSB is the 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 least significant 4 bit would be 0101.

LSB: Least - significent bit. In a binary number the LSB is the lest 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	"	33	

2/(b) Ans: Converting the numbers —

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

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

6 | 37	
6 | 6 - 1	↑
6 | 1 - 0	
0 - 1	

= 101

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

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

$= 30 + 3$

$= 33$

$\Rightarrow (33)_C = (33)_{10}$

(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:

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(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