

Name - Md. Rakib Hasan.

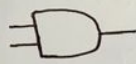


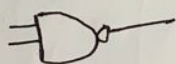
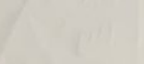
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Course - CSE-213 (Digital Logic Design) ①

Answer to the Question - 01

1. ① Ans: Define DLD: Digital Logic is the basic of Electronic System. Such as Computers And cell phones. Digital Logic is rooted in binary Code, a Series of zeroes and One each having an Opposite value. The system facilitates the design of Electronic Circuits that Convey information - Including logic gate functions include and or and Not. The value System Translates input Signals into Specific Output. Digital Logic facilitates Computing, robotics and Other Electronics Application.

② DLD list the fields:

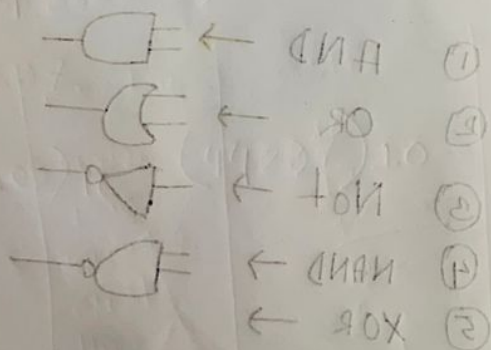
- ① AND → 
- ② OR → 
- ③ Not → 
- ④ NAND → 
- ⑤ XOR → 

②

⇒ DLD list Field: Digital Logic Design is foundational to the fields of Electrical Engineering And Computer Engineering. Digital Logic designers build complex electronic components that use both electrical and computational characteristics. These characteristics may involve power, current, logical functions, protocol and user input.

Digital Logic Design is used to develop hardware, such as circuit boards and microchips. processor. This hardware processor user input, system protocol and other data in computer.

Navigational System, cell phones or other high-tech system.



DLD list the fields:

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 appear at any of the output, making this the general-purpose combinatorial logic device available.

- High Accuracy And programmability.
- Storage of Digital data is easy.
- Immune to noise.
- Can be implemented in the form of integrated circuits
- Greater Reliability and flexibility.
- They are usually much slower than dedicated logic circuits
- They can store more, and.

x

$$01(FESPP) = 01(PODA) \Leftrightarrow$$

(u)

Answer to the Question - No - 2

⇒ Convert the Number:

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

$= (1295)_8$ Ans

Ans

8	715
8	89-5
8	10-9
8	1-2
	0-1

↑

(b) $(ACE9)_{16} = (?)_{10}$

$$\begin{aligned} &= (A \times 16^3) + (C \times 16^2) + (E \times 16^1) + (9 \times 16^0) \\ &= 10 \times 16^3 + 13 \times 16^2 + 0 \times 16^1 + 9 \times 16^0 \\ &= 10 \times 4096 + 13 \times 256 + 0 + 9 \times 1 \\ &= 40960 + 3328 + 9 \\ &= 44297 \end{aligned}$$

⇒ ⇒ $(ACE9)_{16} = (44297)_{10}$

we know →

A = 10

B = 11

C = 13

Answer to the Question No - 3

(a) Ans:

MSB

MSB stands for most significant bit. And LSB with Example:

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,

And 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 - significant bit. In a binary number the LSB is the least weighted bit in the number.

parameter	MSB	LSB	values
Gain	16	48	
Low	17	49	
Mid Freq	18	50	
Mid	19	51	
High	20	52	
Level	21	53	
Expression	22	54	
u mid	4	33	
	1		

3 (b) Convert the Numbers:

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

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

6 | 37

6 | 6-1

6 | 1-0

6 | 0-1

↑

101

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

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

$= 30 + 3$

$= 33$

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

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

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

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

$= 4594$

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

Base
(power)
43210

(1v) (ABDEF)16 = (?)8

= A x 16^4 + B x 16^3 + C x 16^2 + D x 16^1 + E x 16^0
= 10 x 16^4 + 11 x 16^3 + 12 x 16^2 + 13 x 16^1 + 15 x 16^0
= 655360 + 45056 + 2304 + 224 + 15
= 702959

=> (ABDEF)16 = (702959)8

We know that

- A = 10
B = 11
C = 12
D = 13
E = 14
F = 15

(iii) (TOFF)8 = 112
= (10 x 8^3 + 0 x 8^2 + 0 x 8^1 + 15 x 8^0) = 640 + 0 + 0 + 120 = 760

(ii) (23)10 = 33
= (2 x 10^1 + 3 x 10^0) = 20 + 3 = 23

=> (1234)8 = (1000)10