

VICTORIA UNIVERSITY BANGLADESH



Assignment On

Course Name : Digital Logic Design

Course code : CSE-213

Submitted By	Submitted To
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Ans. to the Q. NO-1(a)

a
* DLD: Digital Logic Design (DLD) is a field of electrical engineering and computer science that focuses on designing and analyzing digital circuit. Digital circuits are composed of logic gates, flip-flops, registers, and other digital components, and they form the foundation of digital systems such as computers and microcontrollers.
* It fields of it: (AND, OR, NOT, NAND, NOR, XOR, and XNOR gates.

b
Advantage of DLD:

* A digital computer stores data in the terms of digits (numbers) and proceed steps from one state to the next.

* The states of a ^{Digital} computer typically involve binary digits which may take form of the presence or absence of magnetic markers in a storage medium, on-off switches or relay. In digital computers, even letters, words and whole texts are represented digitally.

Ans to the Q. No. 2 (a)

Q $(275.125)_{10} = ?_8$

$(275)_{10}$

$$\begin{array}{r} 2 \overline{) 275} \\ \underline{2 137} \\ 2 \overline{) 68} \\ \underline{2 34} \\ 2 \overline{) 17} \\ \underline{2 8} \\ 2 \overline{) 4} \\ \underline{2 2} \\ 2 \overline{) 1} \\ \underline{0} \end{array}$$

$.125 \times 2 = 0.25$

$.25 \times 2 = 0.5$

$0.5 \times 2 = 1$

$$\begin{array}{r} \hline 1.75 \\ = 1 \end{array}$$

$= \frac{100}{4} \frac{010}{2} \frac{011}{3} . 1$

$= (423.1)_8$ Ans.

Ans. to the Q. NO. 2 (c)

$$\underline{1000111.1011}_2 = 10$$

$$\begin{array}{l} 1000111 \\ \begin{array}{l} | \\ | \\ | \\ | \\ | \\ | \\ | \end{array} \end{array} \begin{array}{l} 1 \times 2^0 = 1 \\ 1 \times 2^1 = 2 \\ 1 \times 2^2 = 4 \\ 0 \times 2^3 = 0 \\ 0 \times 2^4 = 0 \\ 1 \times 2^5 = 32 \\ \hline = 39 \end{array}$$

$$\begin{array}{l} .1011 \\ \begin{array}{l} | \\ | \\ | \\ | \end{array} \end{array} \begin{array}{l} 1 \times 2^{-1} = 0.5 \\ 0 \times 2^{-2} = 0 \\ 1 \times 2^{-3} = 0.125 \\ 1 \times 2^{-4} = 0.0625 \end{array}$$

$$\begin{array}{l} 1011 \\ \begin{array}{l} | \\ | \\ | \\ | \end{array} \end{array} \begin{array}{l} 1 \times 2^{-4} = 0.0625 \\ 1 \times 2^{-3} = 0.125 \\ 0 \times 2^{-2} = 0 \\ 1 \times 2^{-1} = 0.5 \\ \hline = 0.6875 \end{array}$$

$$\therefore \underline{10 (39.06875)}_{10} \text{ Ans.}$$

Ans. to the Q. NO. 2 (d)

$$\underline{15435.663}_8 = 1$$

$$= (1 \times 8^4) + (5 \times 8^3) + (4 \times 8^2) + (3 \times 8^1) + (5 \times 8^0) + (0 \times 8^{-1}) + (6 \times 8^{-2}) + (3 \times 8^{-3})$$

$$= 6941.099609375_{10} \text{ Ans.}$$

Ans. det he. 8 NO = 3 (11)

$$(iii) (10354.2762)_8 = 16$$

$$\therefore 10354.2762$$

$$= 1006011101100.0101111001$$

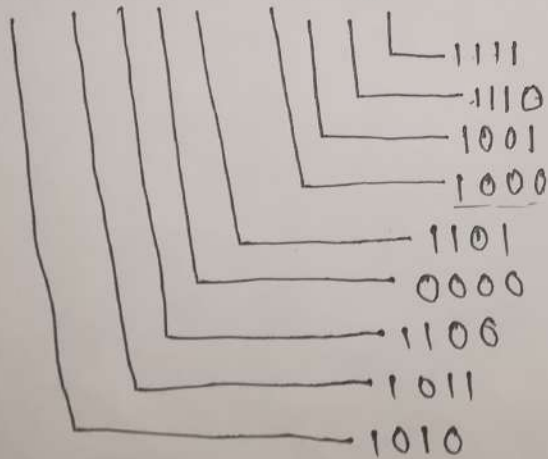
$$= \frac{10000}{10} \frac{1110}{E} \frac{1100}{C} \frac{0101}{5} \frac{1111}{F} \frac{001}{2}$$

$$= 10EC.5F2$$

$$= 10EC.5F2 \text{ Ans.}$$

$$(iv) (ABCOD.89BF)_{16} = 8$$

$$\therefore A B C O D . 8 9 B F$$



$$\therefore \frac{010}{2} \frac{101}{5} \frac{011}{3} \frac{110}{6} \frac{000}{0} \frac{001}{1} \frac{101}{5} \frac{100}{4} \frac{010}{2} \frac{011}{3} \frac{110}{6} \frac{111}{7} \frac{100}{4}$$

$$= (2536015.423674)_{10} \text{ Ans.}$$