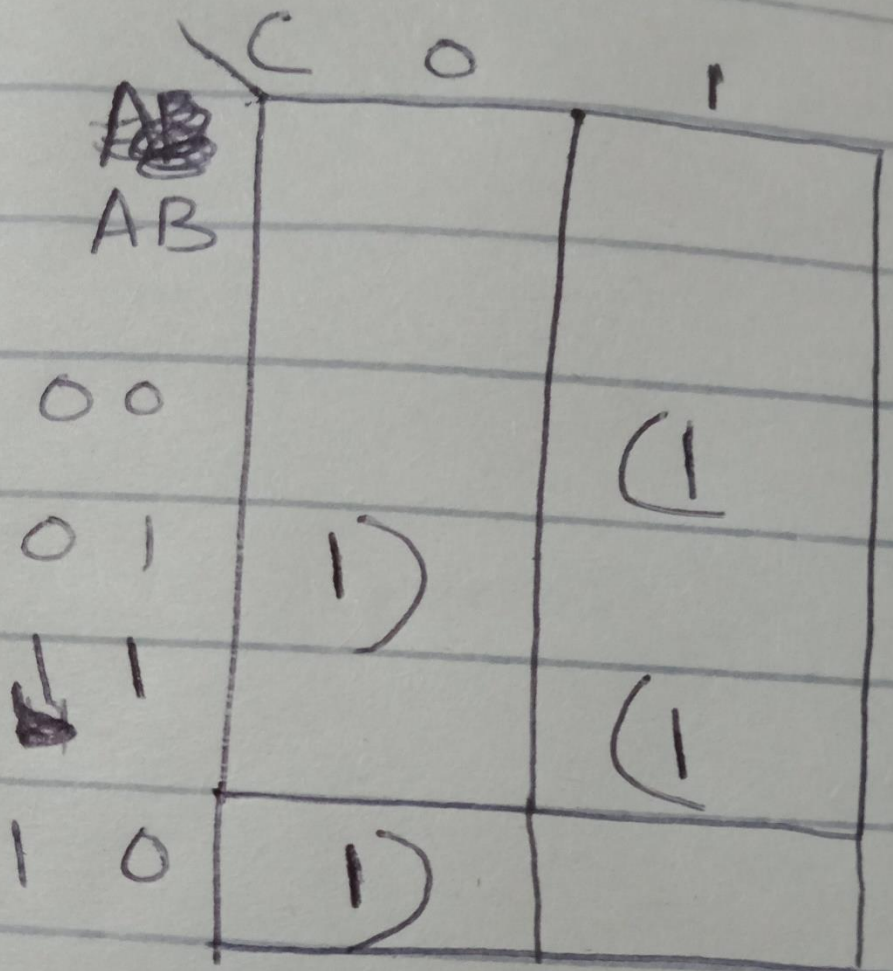
ID # 12282

BSSE Section A

Submitted to : Sir Amin

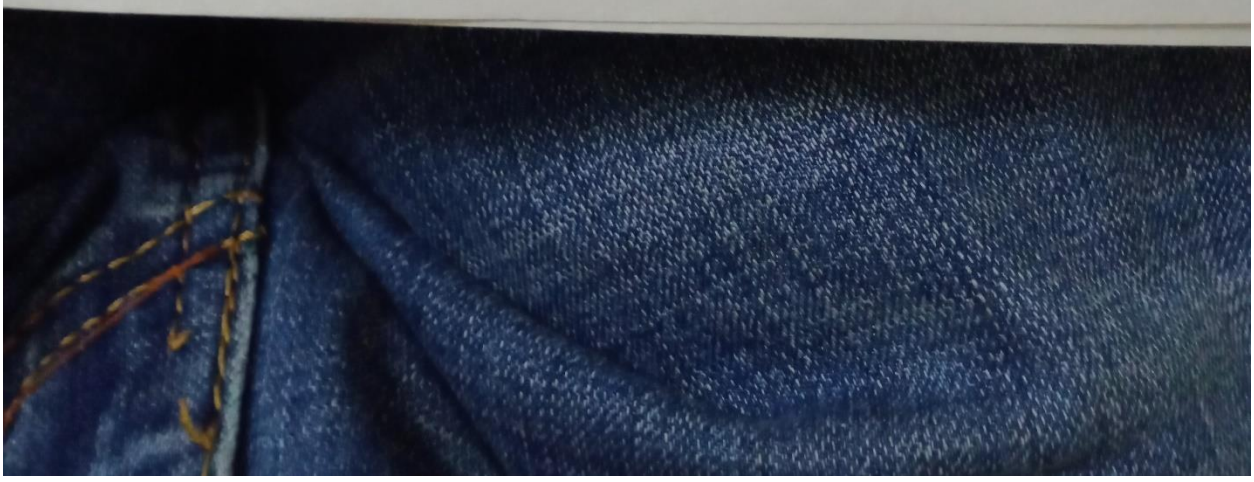
Submitted by: Hamza riaz

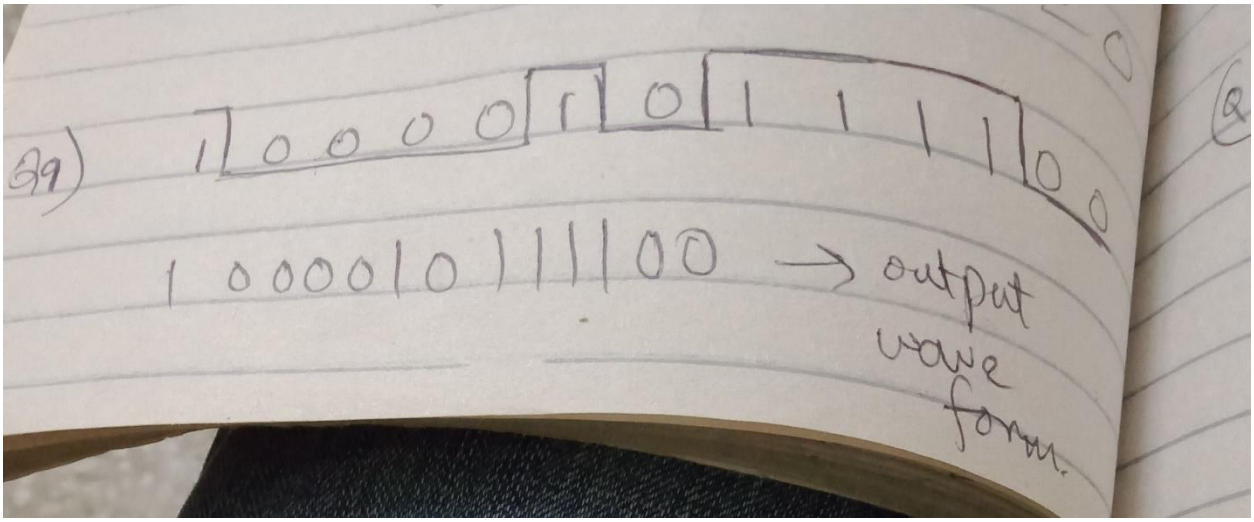
Q15)



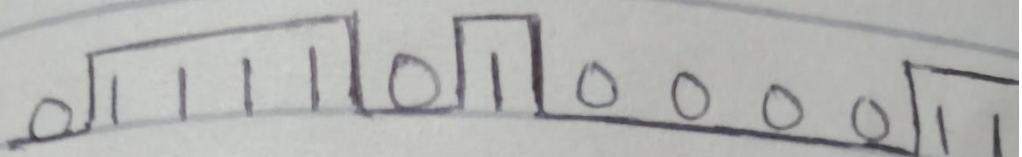
(16)

$$(A+B+\bar{C})(A+\bar{B}+C)(\bar{A}+\bar{B}+\bar{C})$$
$$\bar{A}+B+C)$$




Q9)
1 0 0 0 0 1 0 1 1 1 0 0
1 0 0 0 0 1 0 1 1 1 0 0 → output wave form.

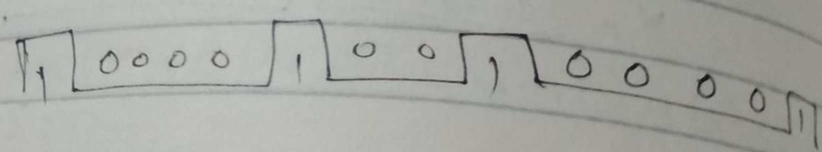
(10) output waveform.

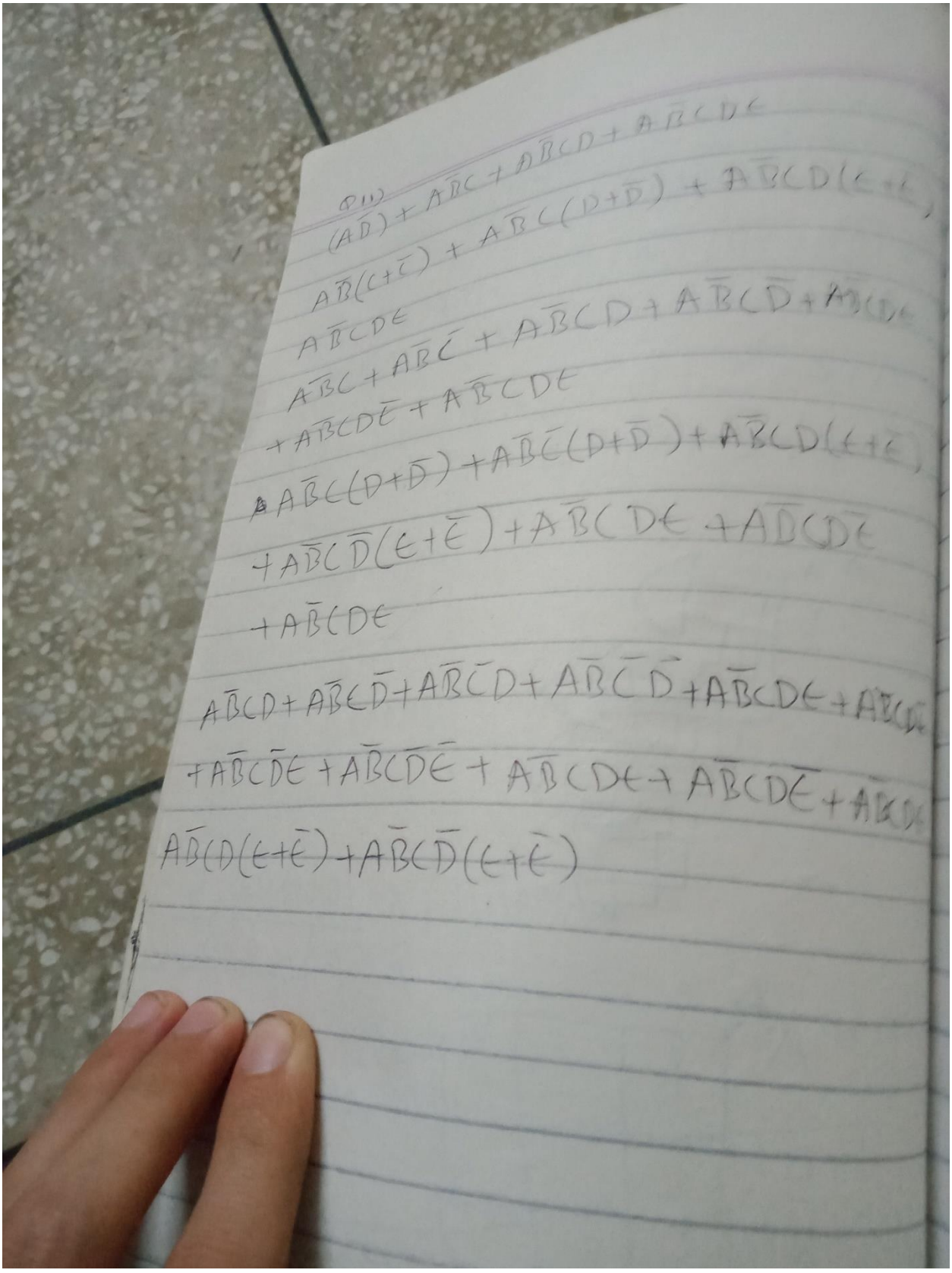


0 1111 0 1 0000 11

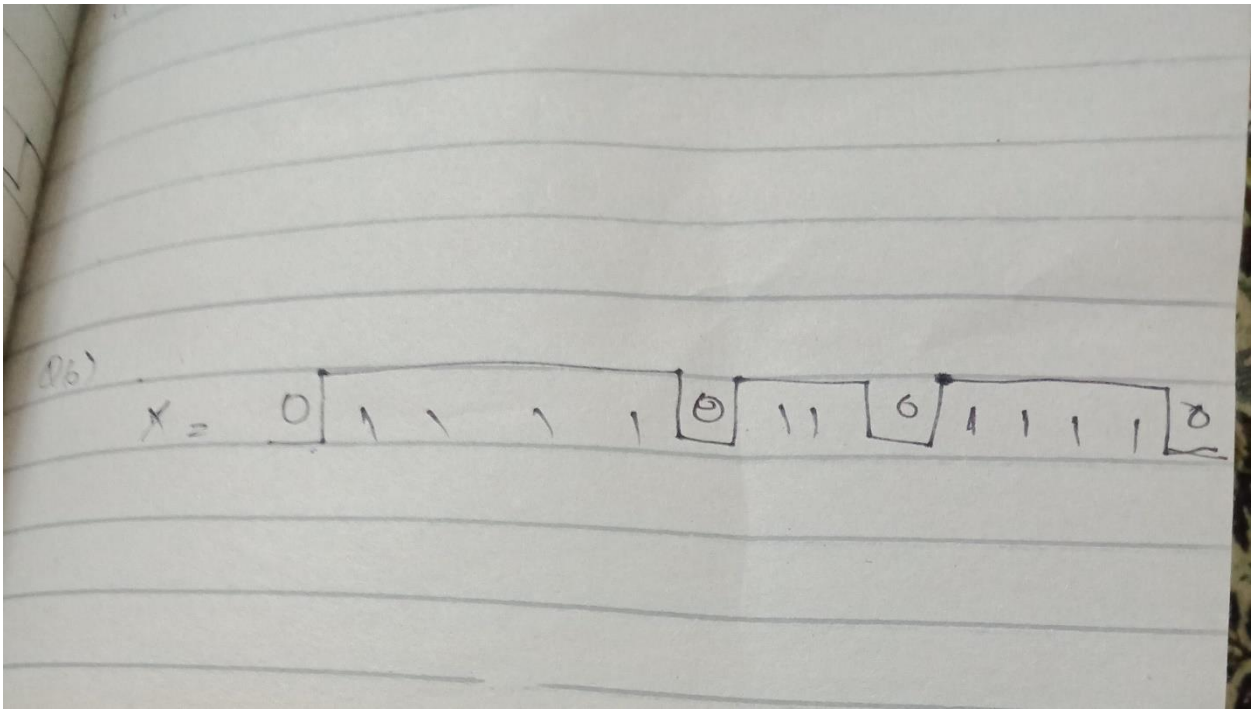
Q8)

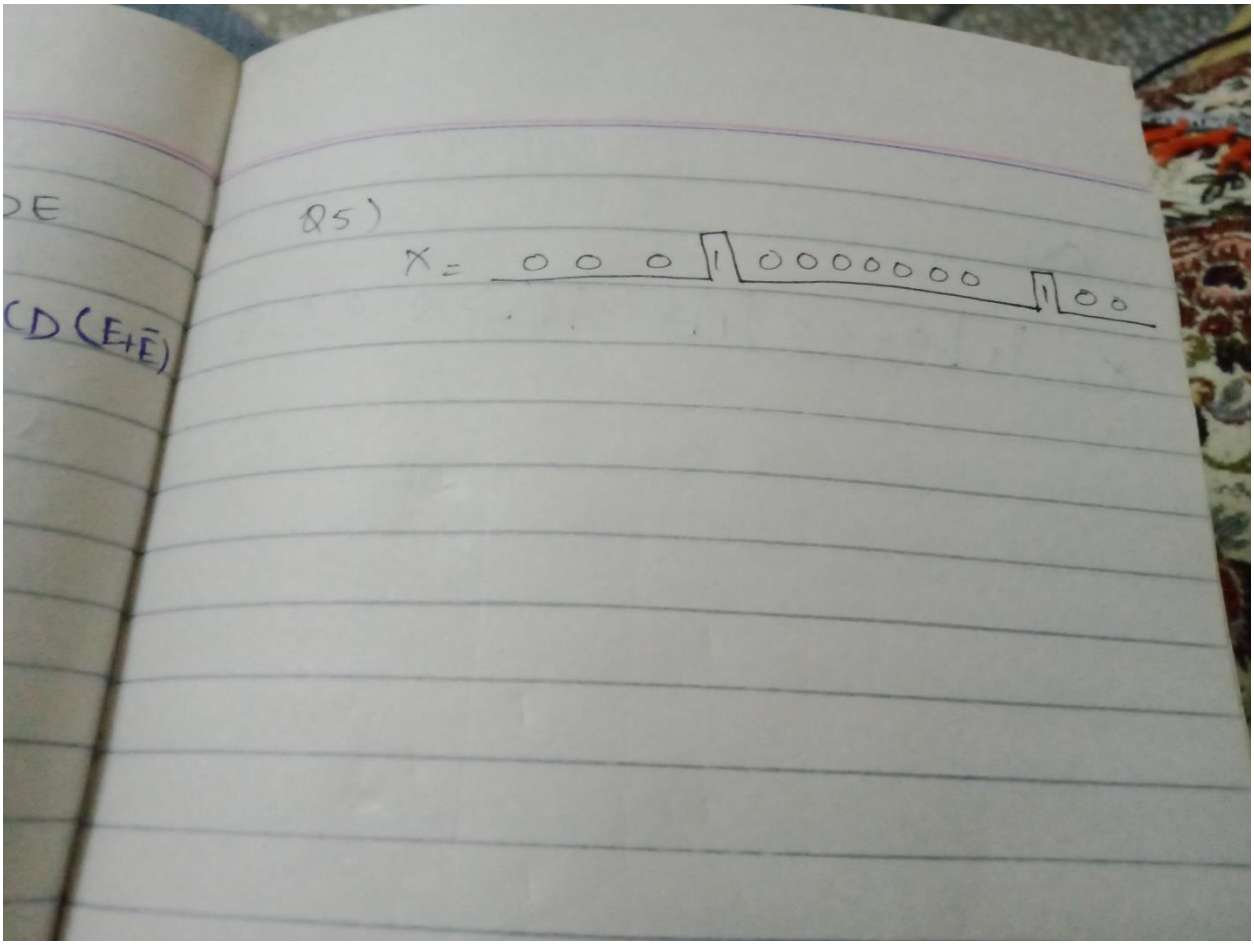
x =

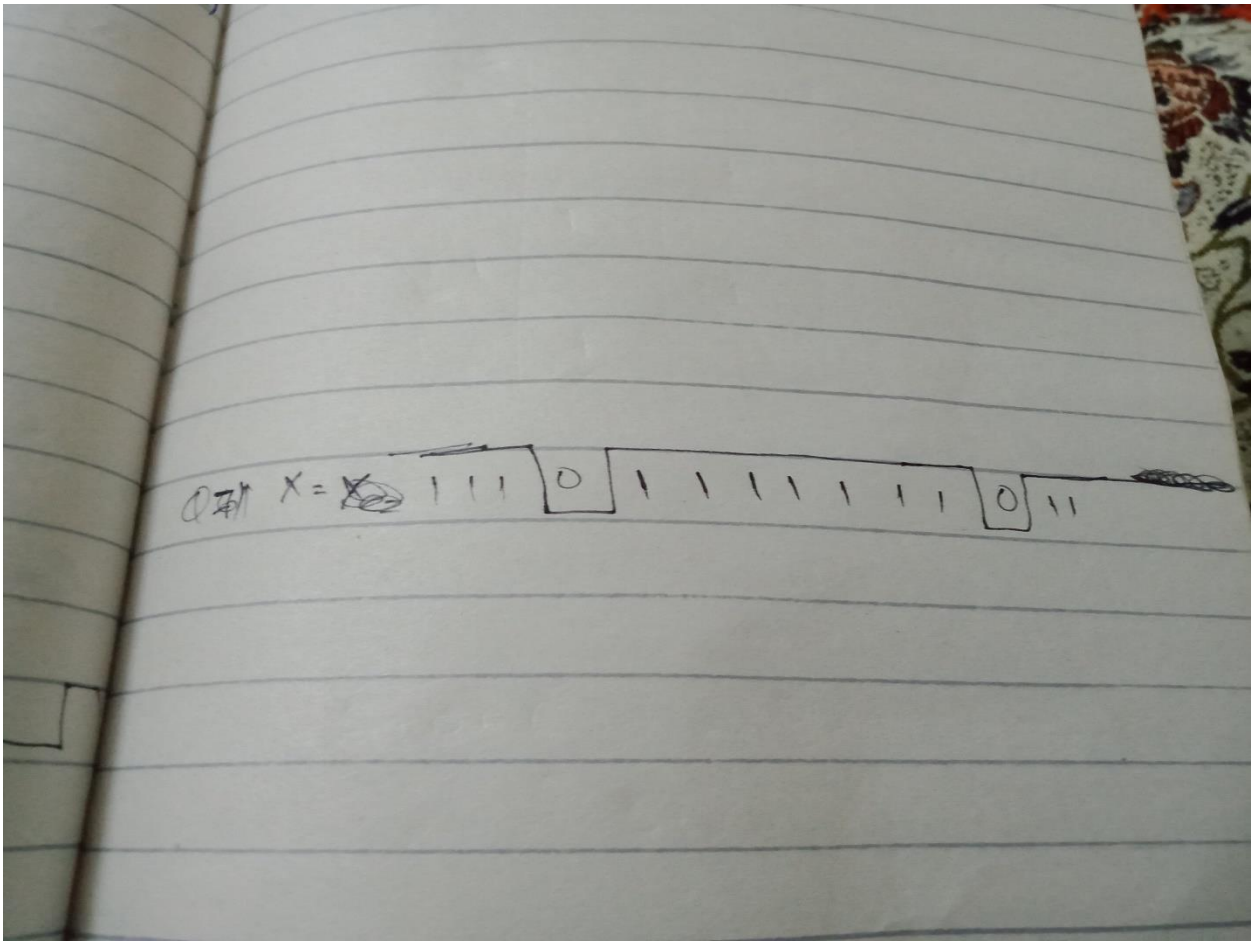




(Q6)




DE
CD(E+Ē)
Q5)
X=
0 0 0
1
0 0 0 0 0 0 0
1
0 0



Major Assignment
Mid-Term
ID# 12282
Subject: Digital logic Design.
Summer Semester 2020

(Q1) Convert each of the following

a) $45.25_{10} = (?)_2$

2	45
2	22 – 1
2	11 – 0
2	5 – 1
2	2 – 1
	1 – 0

Happened $45_{10} = 101101_2$

Now- .25

0	.25
.	2
0	5
	2
1	0

$\Rightarrow 0.25_{10} = 0.01_2$

$= 101101_2 + 0.01_2$

= 1011.01$_2$

b) $10000000.1010_2 = (?)_{10}$

weight = $2^7\ 2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0\ 2^{-1}\ 2^{-2}\ 2^{-3}\ 2^{-4}$.

Binary 1 0 0 0 0 0 0 0 . 1 0 1 0

$10000000.1010 = 2^7 + 2^{-1} + 2^{-3}$

$= 128 + 0.5 + 0.125$

$= 128.625$

c) $4D7F_{16} = (?)_{10}$

$4D7F_{16} = 4.16^3 + 13.16^2 + 7.16^1 + 15.$

$= 16384 + 3328 + 112 + 15$

$= 19839_{10}$

d) $128_{10} = (?)_{16}$

$\frac{128}{16} = 8$

$\frac{8}{16} = 0.5 \times 16$

$= 8$

$128_{10} = (88)_{16}$

e) $3A6F_{16} = (?)_2$

3 A 6 F
0011 1010 0110 1111

$3A6F_{16} = (0011101001101111)_2$

f) $110000111101101_2 = (?)_{16}$

1100 0011 1110 0101
↓ ↓ ↓ ↓
C 3 E 5

$= (C3E5)$

g) $6173_8 = (?)_{10}$

$(6173)_8 = (6\times8^3) + (1\times8^2) + (7\times8^1) + (3\times8^0)$

$= (6\times512) + (1\times64) + (7\times8) + 3\times1)$

$= 3072 + 64 + 56 + 3$

$= 3195_{10}$

h) $169_{10} = (?)_8$

$169/8 = 21.125 = 0.$

$\frac{21}{8} = 2.625$

$= 0.625 \times 8$

$\frac{2}{8}$ $0.25 = 0.2$

$169_{10} = (251)_8$

i) 2A7D

Finding Weight: $2^7\ 2^6\ 2^5\ 2^4\ 2^3\ 2^2$
1 1 1 1 1 1

$= 128+64+32+16+8+4+2+1$

$= (255)_{10}$

k) $12_{10} = (?)_2$

first we convert 12 to binary

2	12
2	6 — 0
2	3 — 0
	1 — 1

$= 1100 \Rightarrow 01100$

d) $198 = (?)_{BCD}$

c) 1000100

d) $6D_{16} - 3F_{16}$

$$\begin{array}{r} 6D_{16} \\ -\ 3F_{16} \\ \hline AC_{16} \end{array}$$

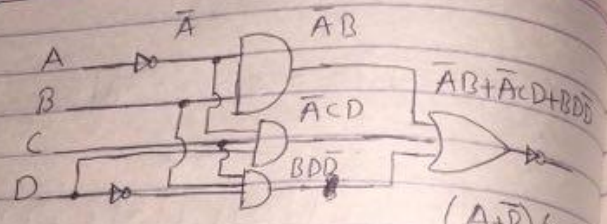
$D_{16} + F_{16} = 13 + 15 = 28_{16} - 16_{16} = 12_{16}$

$= 6_{16} + 3_{16} + 1_{10} = A$

e) $0001\,0110_{BCD} + 0001\,0101_{BCD} = (?)$

$$\begin{array}{r} 0001\ \ 0110 \\ +\ 0001\ \ 0101 \\ \hline 0010\ \ 1011 \\ -\ 0110 \\ \hline 0011\ \ 0000 \end{array}$$

Q 17



$(A+\bar{B})(A+\bar{C}$

$(\bar{B}+\bar{D}+B)$

Answer no 3:

Binary form (added zeros): 11010011000 divided by 1010 Result is 11101001 Remainder is 010 Working is 11101001 ---------- 11010011000 1010 ---- 1110011000 1010 ---- 100011000 1010 ---- 01011000 0000 ---- 1011000 1010 ---- 001000 0000 ---- 01000 0000 ---- 1000 1010 ---- 010 Transmitted value is: 11010011010