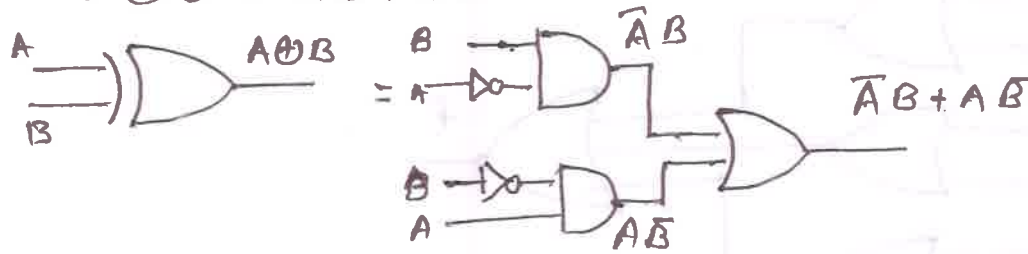


Answer key:-

Q. No.

1. $A \oplus B = A\bar{B} + \bar{A}B$

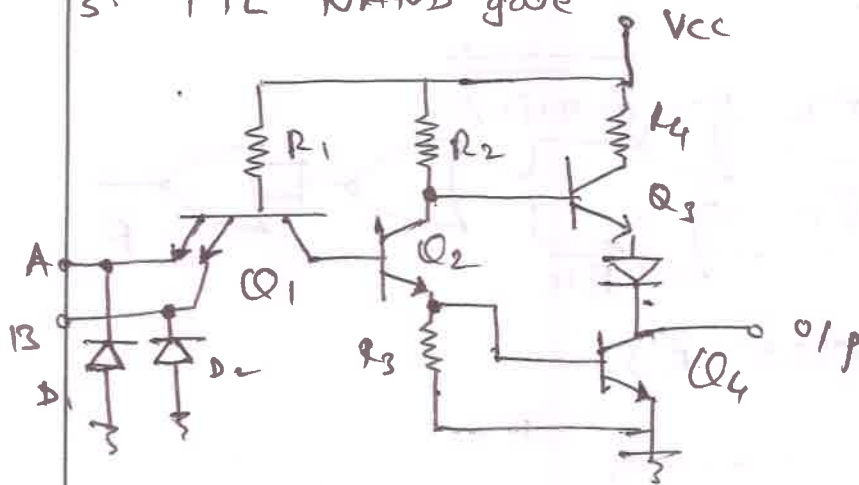


Marks

3. Types of ROM's

1. MROM 2. PROM 3. EPROM 4. E²PROM

5. TTL NAND gate



Q2. 1. Conversion of 4 bit BCD to excess 3-code

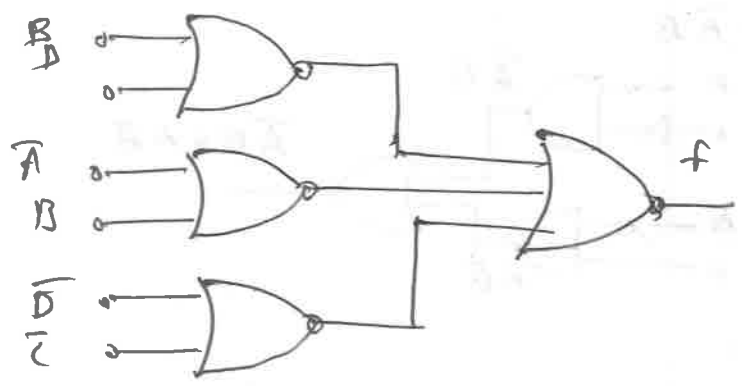
$$X_1 = \bar{B}_1 \quad X_2 = \bar{B}_2 B_1 + B_2 B_1 \quad X_3 = B_3 \bar{B}_2 \bar{B}_1 + \bar{B}_3 B_1 + \bar{B}_3 B_2$$

$$X_4 = B_4 + B_3 B_2 + B_3 B_1$$

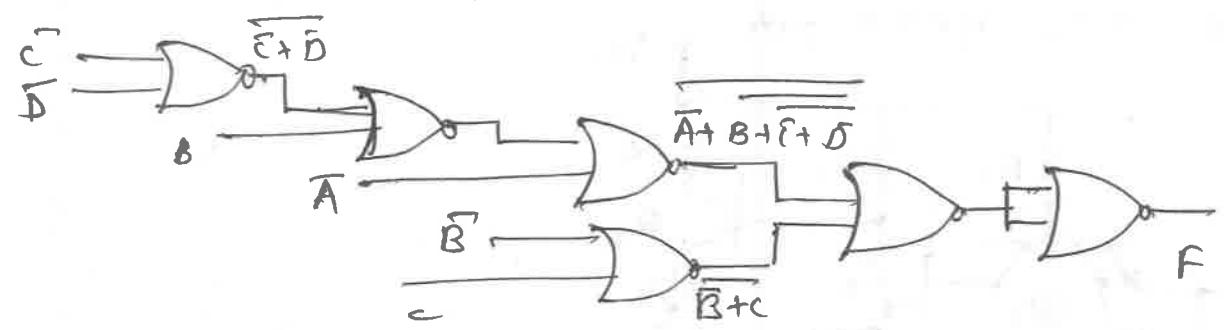
2. 1 line-to 4-line demultiplexer

select code		outputs			
S_1	S_0	Q_3	Q_2	Q_1	Q_0
0	0	0	0	0	1
0	1	0	0	1	0
1	0	0	1	0	0
1	1	1	0	0	0

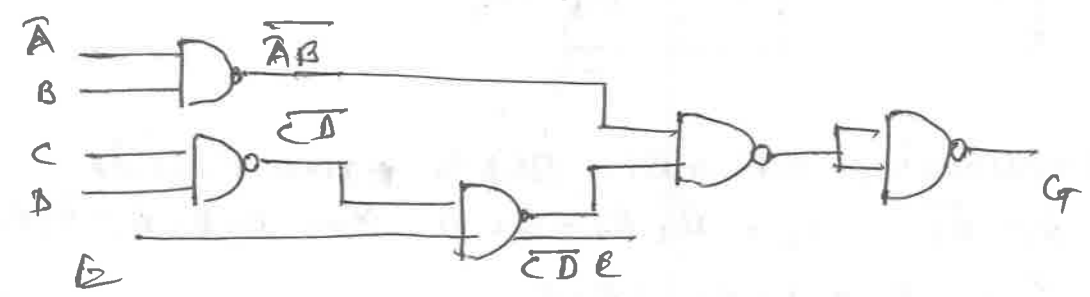
Q3. 1. $f = \sum m(1, 5, 6, 12, 13, 14) + d(2, 4)$
 $f_{min} = B\bar{C} + B\bar{D} + \bar{A}\bar{C}D$ — SOP minimal
 $f_{min} = (B+D) \cdot (\bar{A}+B) \cdot (\bar{C}+D)$ — POS minimal



2. a. $f = A(B+C) + B\bar{C}$



b. $G = (A+B)(C+D+E)$



- Q4. 1. $(679 \cdot 6)_{BCD} + (536 \cdot 8)_{BCD} = (1216 \cdot 4)_{BCD}$
 2. $(6E)_{16} + (C5)_{16} = (133)_{16}$
 3. $(2598 \cdot 675)_{10} = (A26 \cdot ACC)_{16}$
 4. $(B9F \cdot AE)_{16} = (5637 \cdot 534)_8$
 5. $(5A9B)_{16} \times (7)_{16} = (27A8D)_{16}$

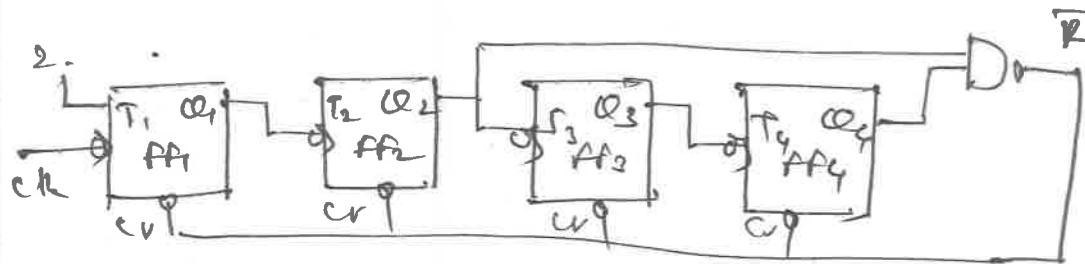
Q5. ϕ $\frac{d\phi}{dt}$ o/p
 0 $\frac{d\phi}{dt}$ 0
 1 $\frac{d\phi}{dt}$ 1

0 RESET
 1 SET

Page No. 02.....

Q. No.

Marks

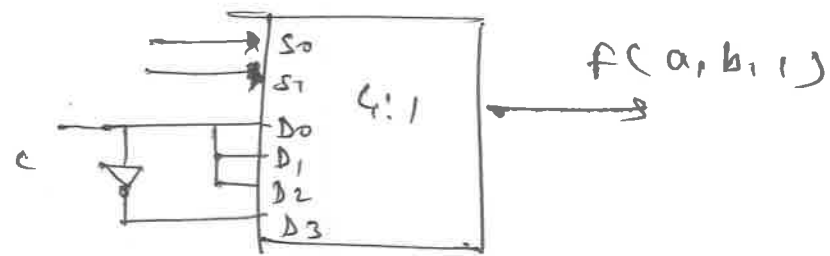


	00	01	11	10
00				
01				
11	X	X	X	X
10		X	1	

Q6. 1. $F = A [B + \overline{C} (\overline{AB + AC})] = AB$

$F = A + B [A C + (B + \overline{C}) D] = A + BD$

2. $F(a, b, c) = \sum m (1, 3, 5, 6)$



3

