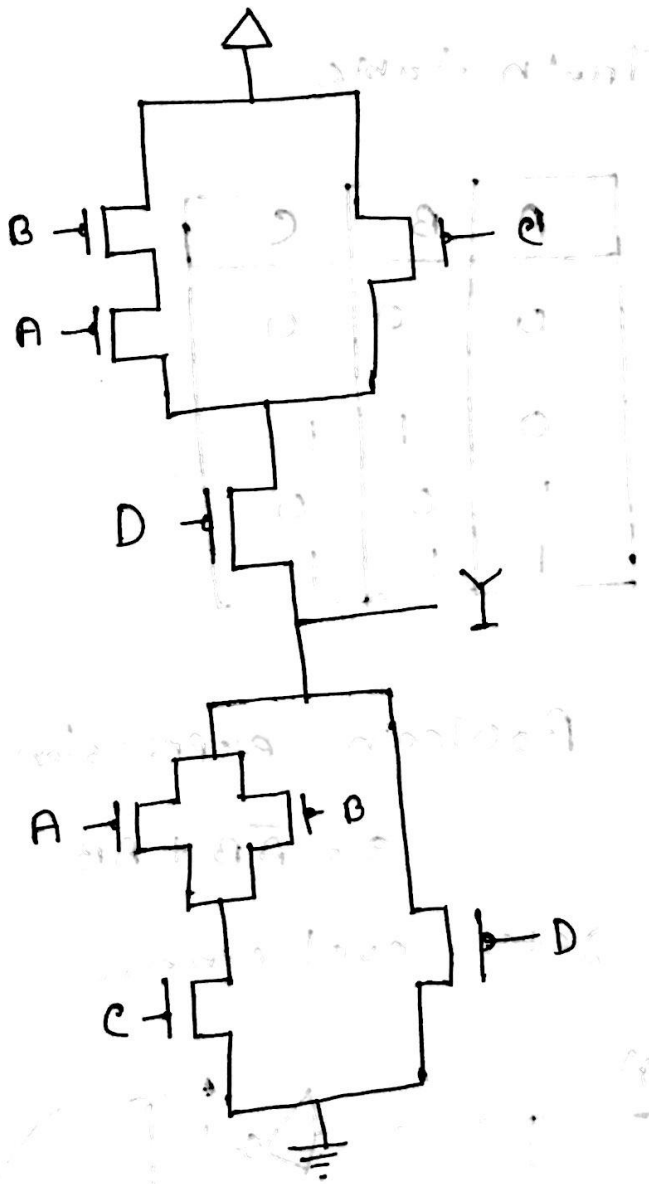
Name : Tamimul Alam
ID : 20-42215-1

MATADOR PAGE NO.: DATE: / /

Answer no 1

CMOS equivalent circuit for $Y = \overline{(A(B+C)+D)}$



Answer no2

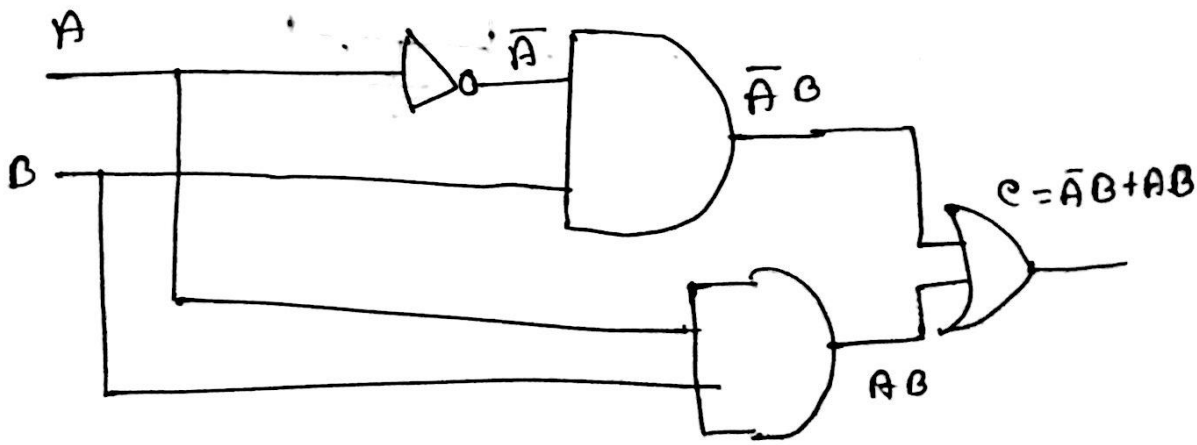
Truth table

A	B	C
0	0	0
0	1	1
1	0	0
1	1	1

Boolean expression for c is

$$c = \bar{A} \cdot B + AB$$

gate level circuit.



Answer no 3

L.S = $(A\bar{B}(C+BD)+\bar{A}\bar{B})C$

$= \bar{B}(A(C+BD)+\bar{A})C$ [$\because AB+AC = AB+C$]

$= \bar{B}(C+BD+\bar{A})C$ [$\because AB+\bar{A} = B+\bar{A}$]

$= \bar{B}CC + \bar{B}CBD + \bar{B}C\bar{A}$

$= \bar{B}C + \bar{B}CBD + \bar{B}C\bar{A}$ [$\because A.A = A$]

$= \bar{B}C + \bar{B}CA$ [$\because A.\bar{A} = 0$]

$= \bar{B}C + \bar{B}C\bar{A}$ [$\because A+0 = A$]

$= \bar{B}C$ [$\because A+AB = A$]

= R.S

$\therefore$ (Proved)

Ansiedad 9

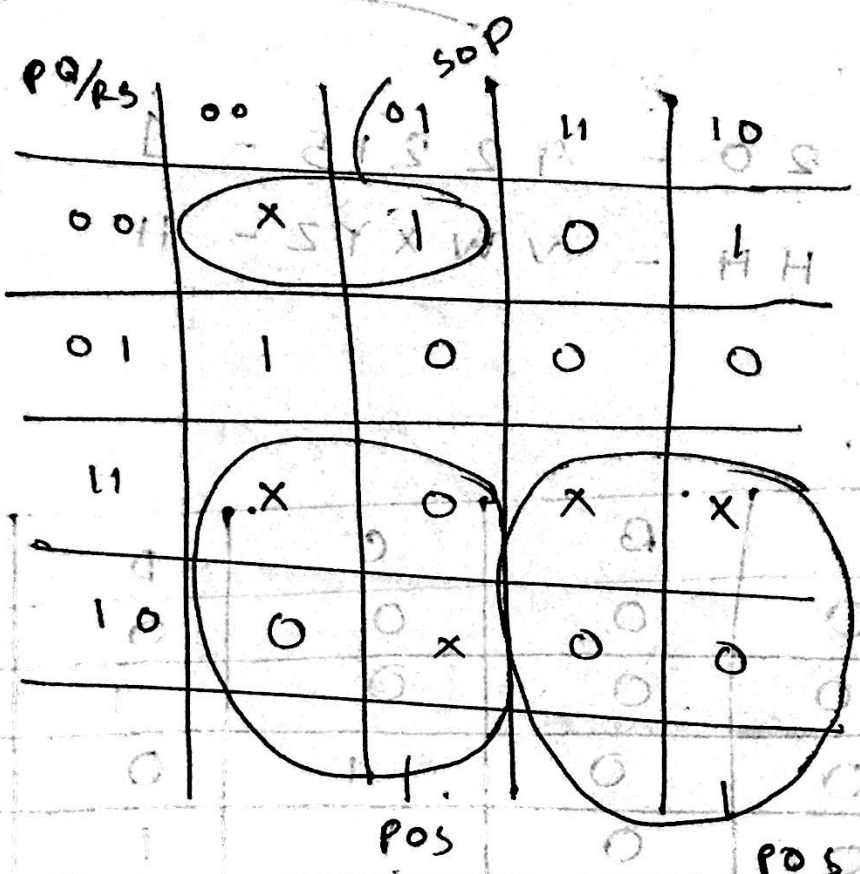
20 - 4 2 2 15 - 1

HH - V W X Y Z - H

A	B	C	D	F
0	0	0	0	0
0	0	0	1	X
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	X
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	X
1	1	0	1	0
1	1	1	0	X
1	1	1	1	X

Kmap is given below;

a)



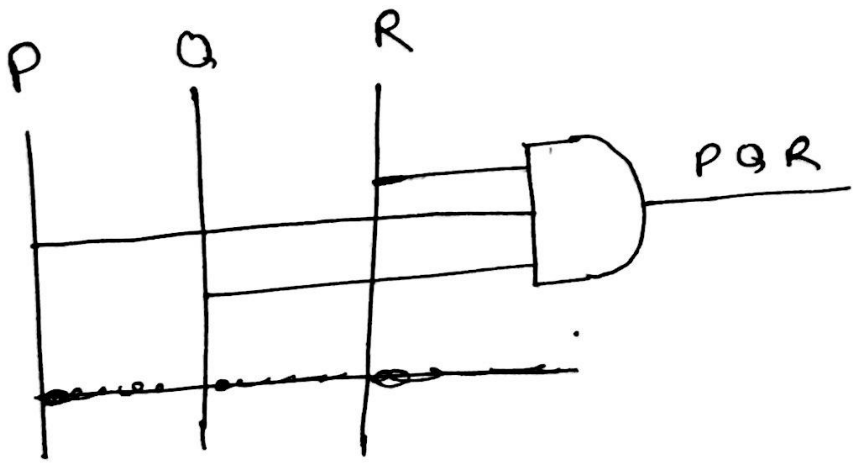
PQ/RS	00	01	11	10
00	X	1	0	1
01	1	0	0	0
11	X	0	X	X
10	0	X	0	0

$F'_{SOP} = PQR$

b) $F_{POS} = \overline{PR} + PR$

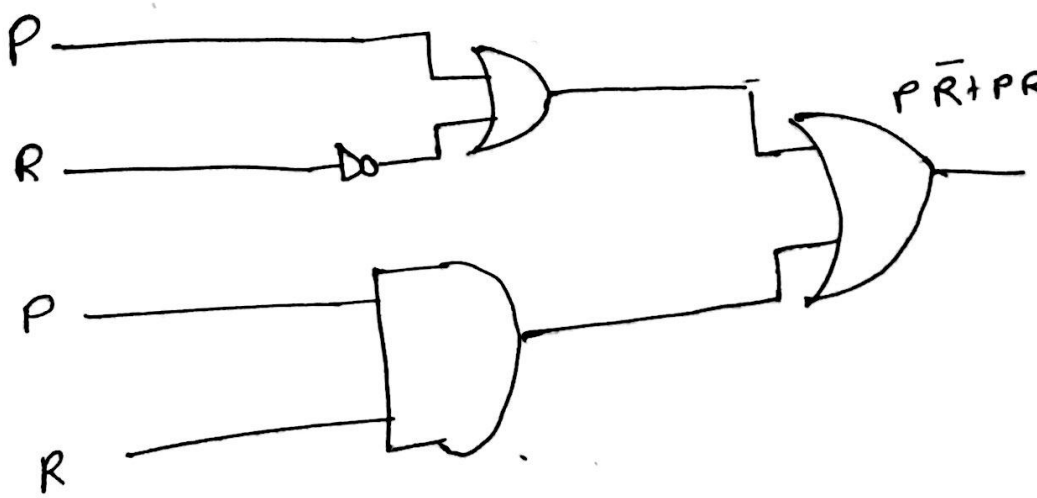
C) SOP → PQR

P Q R.



P(SOP)

D)



F(POS)

Answer no 5

$$T(A,B,C,D) = \pi(4,2,2,1,5,18,13,15)$$

A	B	C	D	F
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	1	0	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1