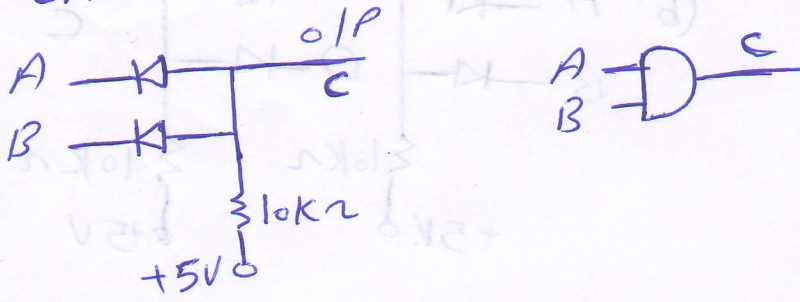


AND gate

2 i/p AND gate

① circuit



② equation

$$C = A \cdot B$$

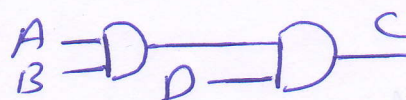
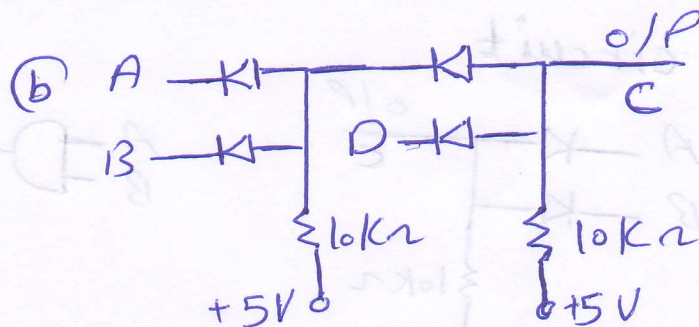
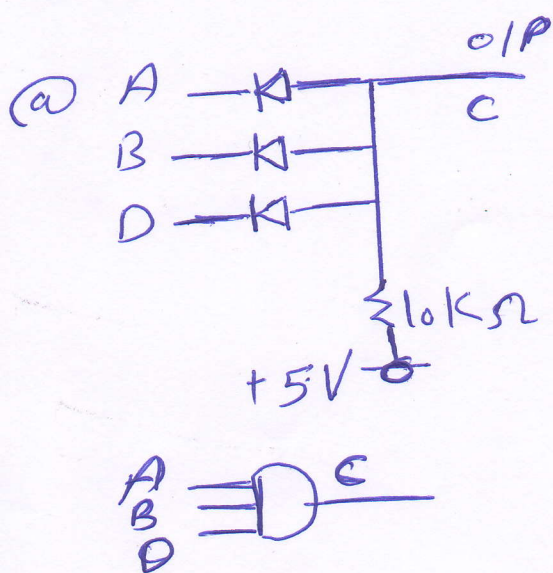
③ truth table

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

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

3 i/p AND gate

① circuit



② equation

for (a) $C = A \cdot B \cdot D$ for (b) $C = (A \cdot B) \cdot D$

③ truth table

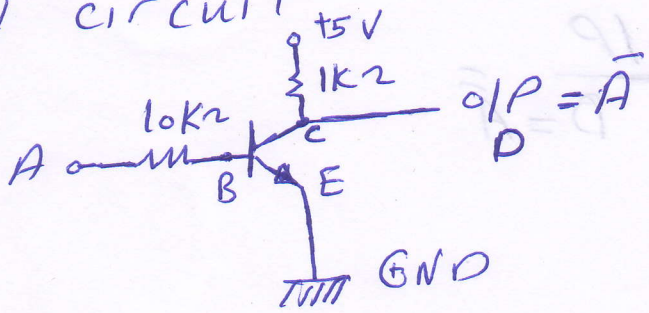
A	B	D	$C = ABD$ or $C = (AB) \cdot D$
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

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

NOT gate

\bar{A}

① circuit

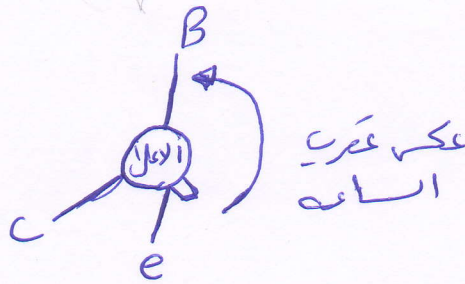


equation
 $D = \bar{A}$

③ truth table

A	\bar{A}
0	1
1	0

④ practical diagram for transistor

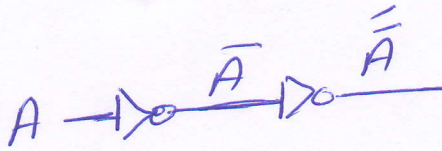
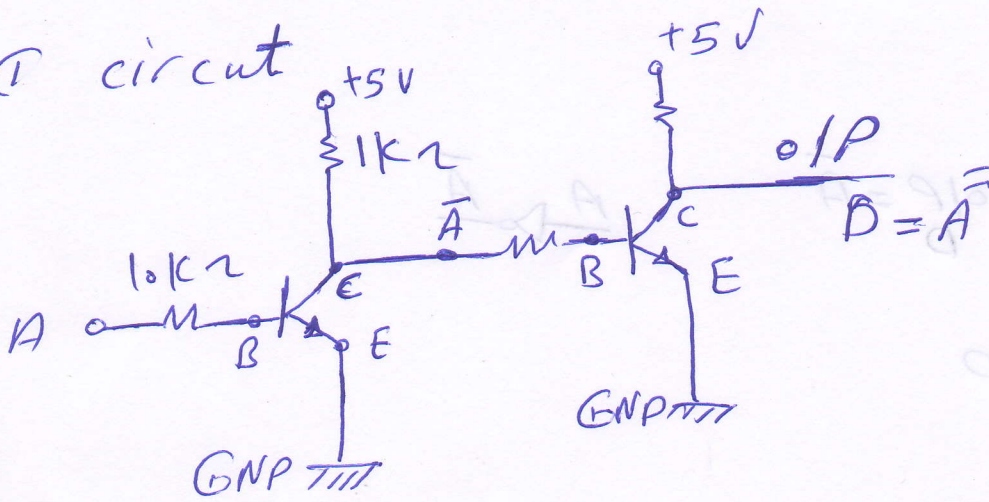


$\bar{\bar{A}}$

stop T.O.V

\bar{A}

① circuit



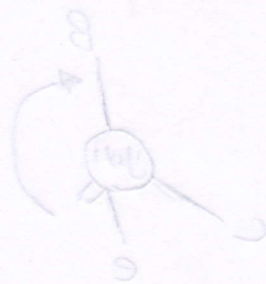
② equation

$$D = \bar{\bar{A}}$$

③ truth table

A	\bar{A}	$\bar{\bar{A}}$
0	1	0
1	0	1

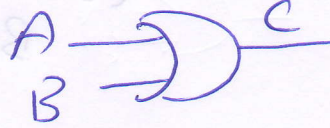
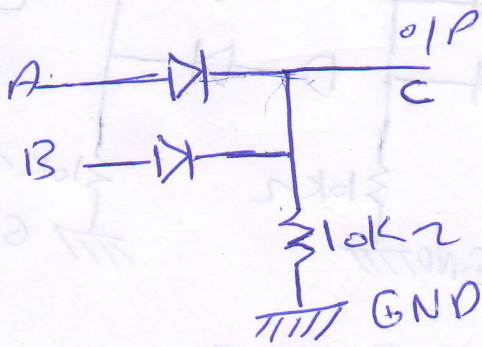
\bar{A}	A
1	0
0	1



OR gate

2 i/p OR gate

① circuit



② equation $C = A + B$

③ truth table

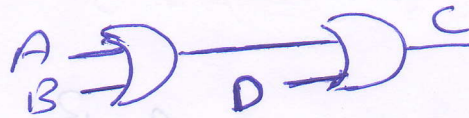
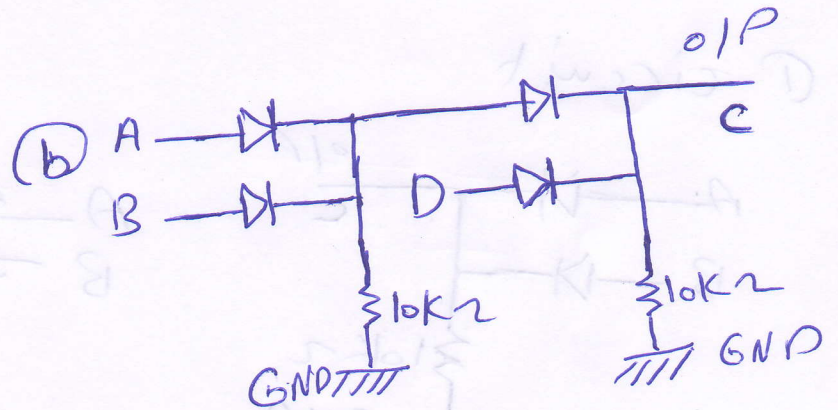
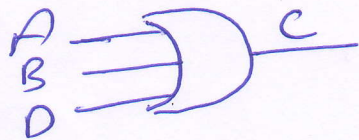
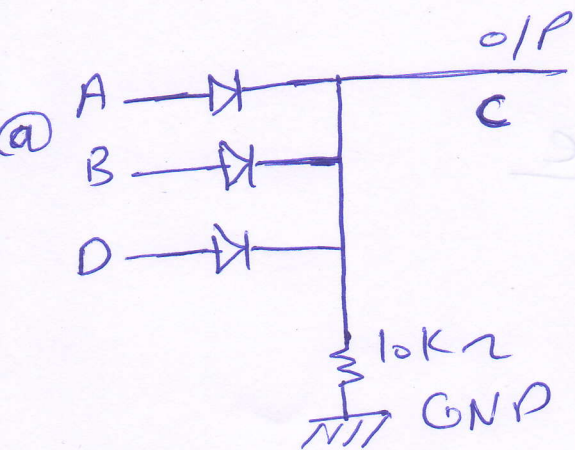
A	B	$C = A + B$
0	0	0
0	1	1
1	0	1
1	1	1

A	B	D	$C = A + B + D$
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1



3 i/p OR gate

① circuit



② equation

for ① $C = A + B + D$

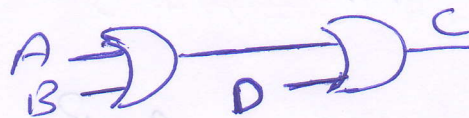
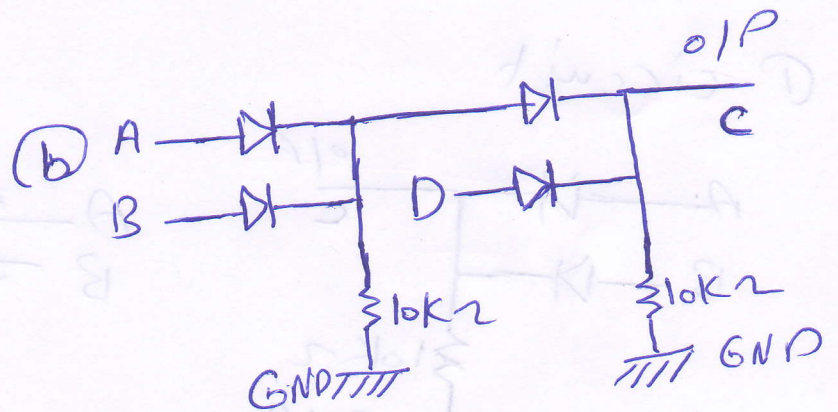
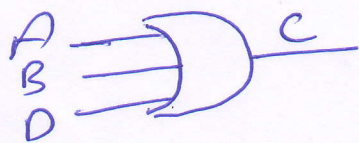
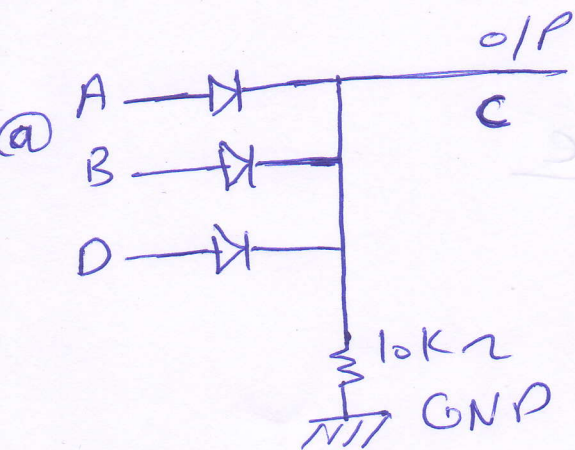
for ② $C = (A + B) + D$

③ truth table

A	B	D	$C = A + B + D$ or $C = (A + B) + D$
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

3 i/p OR gate

① circuit



② equation

for ① $C = A + B + D$

for ② $C = (A + B) + D$

③ truth table

A	B	D	$C = A + B + D$ or $C = (A + B) + D$
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1