Dr. Kumar Balwant Singh.
physics.

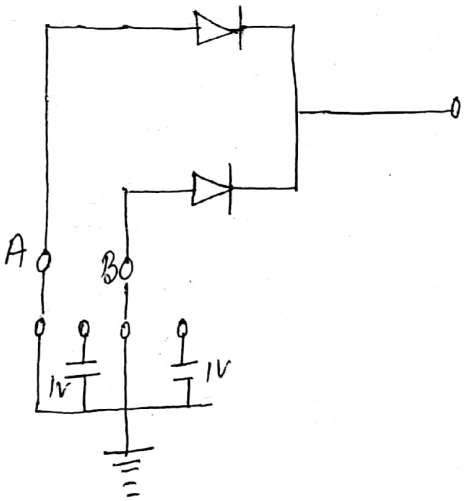
⇒ # Logic gates

The digital ckt that can be analyzed with the help of Boolean algebra is called Logic Gate or Logic ckt, OR, AND, NOT, and Flip-flop are the most commonly used logic Gates.

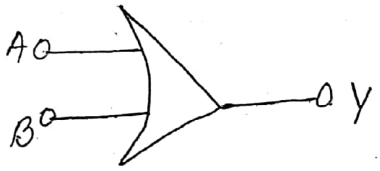
→ OR GATES:- This has two or more input and one output. OR gate configuration with diode known as diode Logic (DL) & with Transmitor is called Transmitor Logic (TL). output = Sum of input

$$Y = A + B + \cdots$$

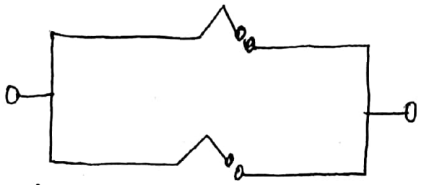
Output is obtained by when any of input is in 'on' state.



(a) Two input OR gate



(b) Symbol of OR gate.

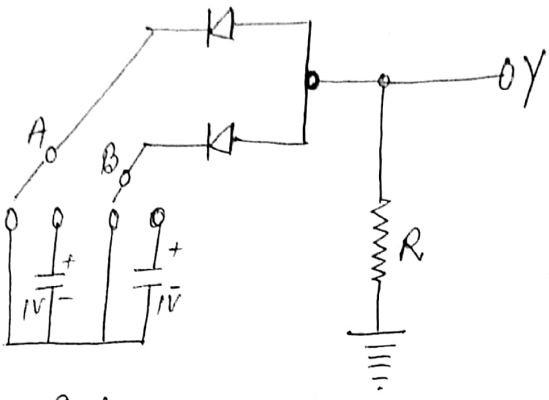


(c) Electrical equivalent

TRUTH TABLE:

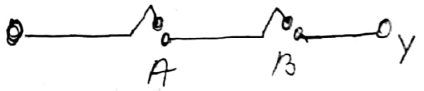
Input		output
A	B	Y = A+B
0	0	0
0	1	1
1	0	1
1	1	1

→ AND GATE:- It has two or more inputs and only one output. The output attains 1 state only when all inputs are in 1 state.



2. (a) Two input AND gate

(b) Symbol of AND gate



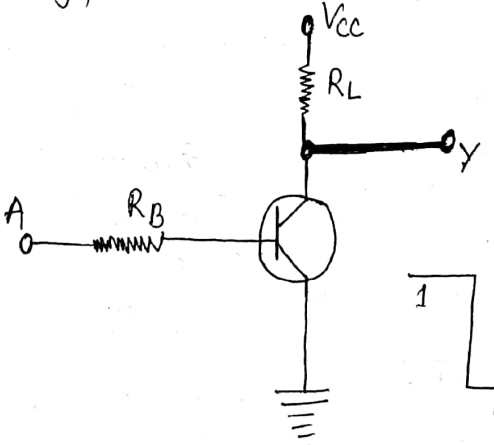
(c) Electrical equivalent

TRUTH TABLE.

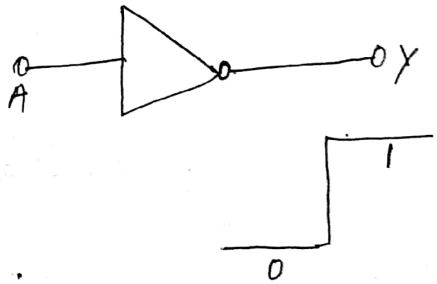
Input		output
A	B	$Y = A \cdot B$
0	0	0
1	0	0
0	1	0
1	1	1

→ NOT GATE (Negator or Inverter):-

It has one input & one output.



3(a). NOT. CKT



(b) Symbol of NOT gate

If input is low (0-state) output will be high (1-state) and vice-versa. This ckt. is called inverter or Negator or NOT gate.

If the input voltage is high enough to saturate the transistor (Fig-3(a)), the output is held at low value. If the input is low, the transistor becomes cut-off and output is high.

TRUTH TABLE.

Input	output
A	B
0	1
1	0