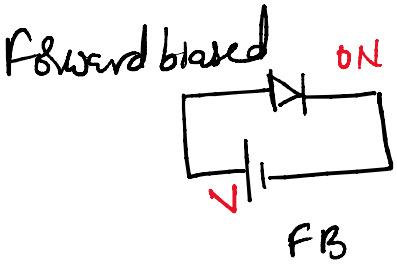
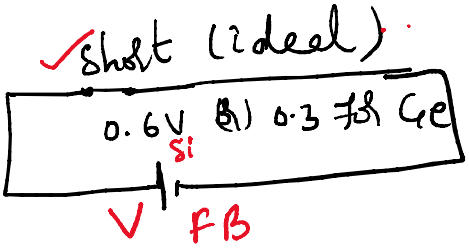
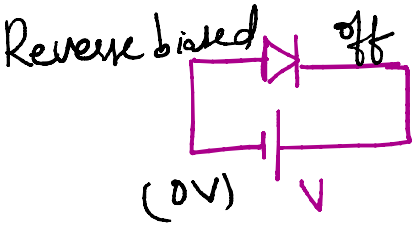
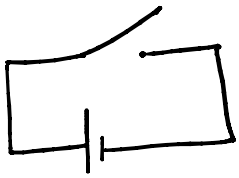
AND _OR Logic





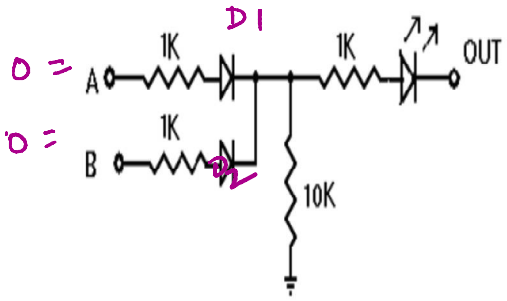


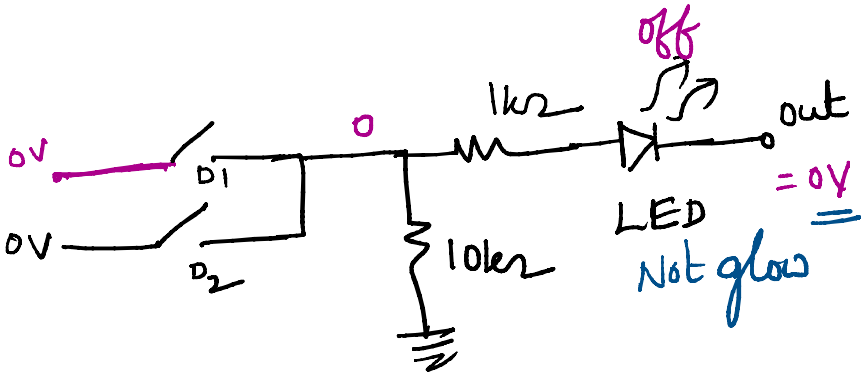


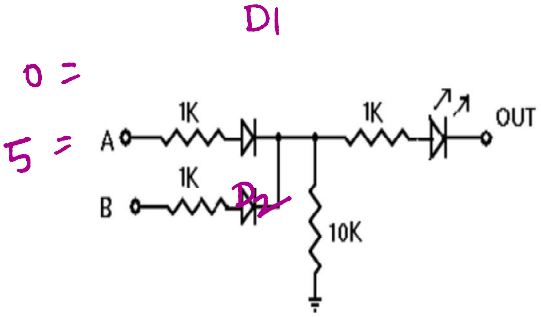
5V → logic 1

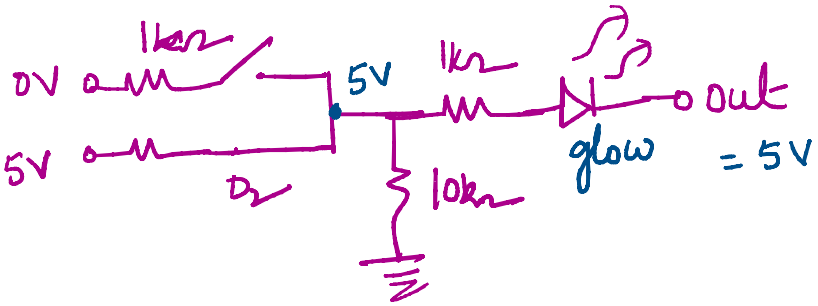
0V → logic '0'

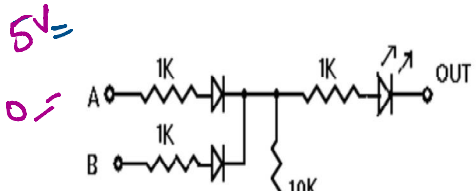
OR gate







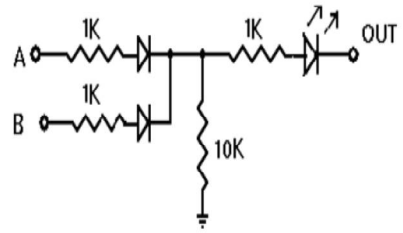




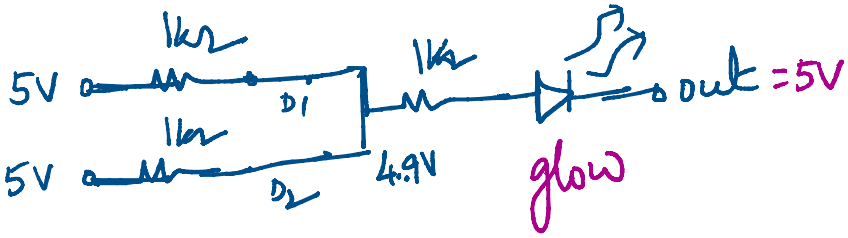
⇒ LED glow = 5V

5V =

0 =

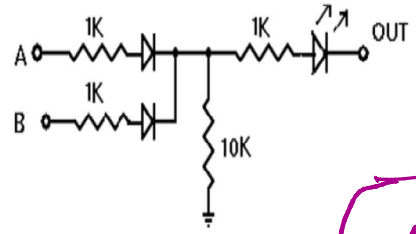


⇒ LED glow = 5V



5 =

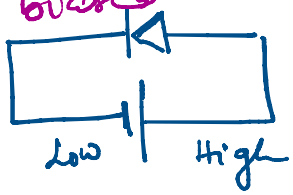
5 =

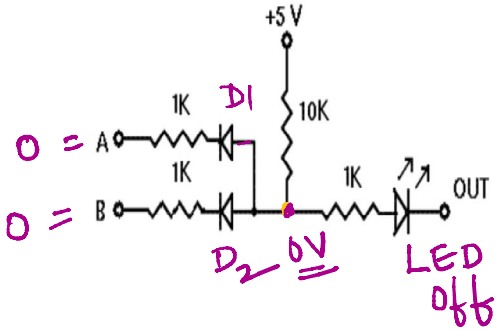


A	B	out
0	0	0 V
0	5	5 V
5	0	5 V
5	5	5 V

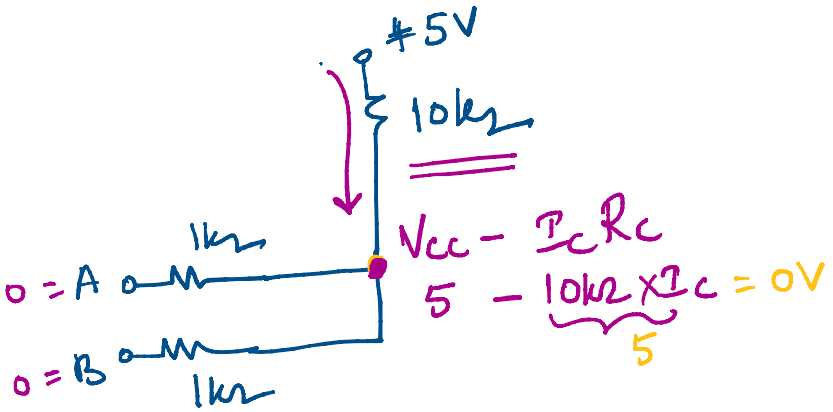
≅ OR gate

Forward biased

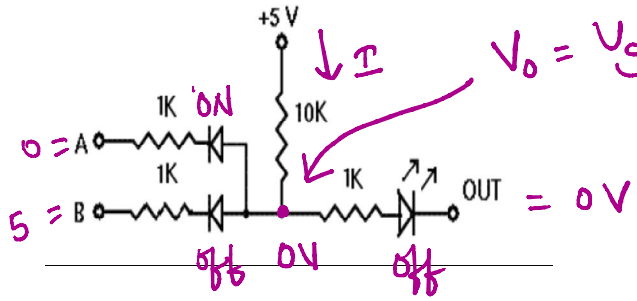


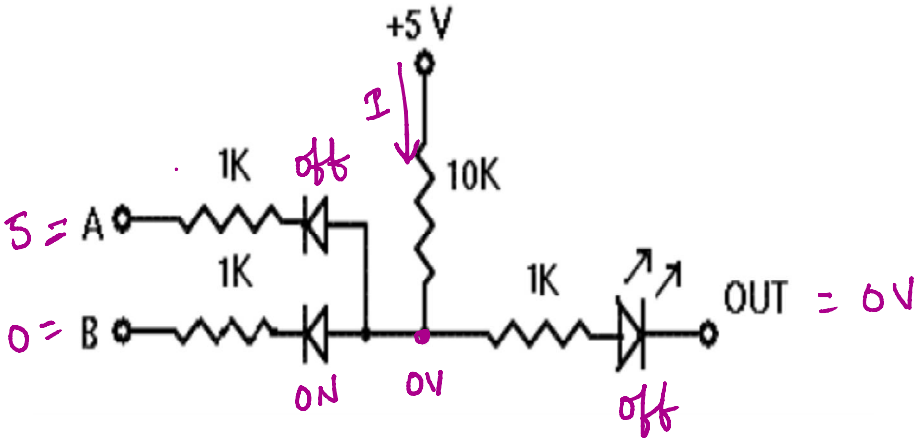


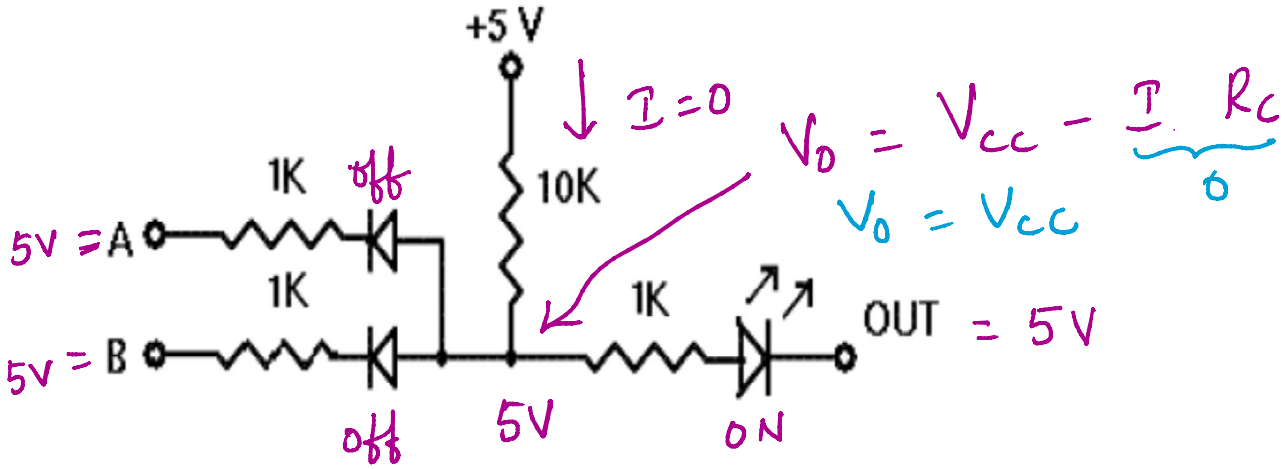
= 0V ≅



D_2 0V LED off


+5 V
I
$V_0 = V_{cc} - IR_c$
0
1K ON
10K
0 = A
1K
5 = B
1K
OUT = 0 V
off
0V
off


+5 V
I
1K off
10K
5 = A
1K
1K
OUT = 0 V
0 = B
ON
0V
off


+5 V
I = 0
$V_0 = V_{cc} - IR_c$
0
$V_0 = V_{cc}$
1K off
10K
5V = A
1K
1K
OUT = 5 V
5V = B
off
5V
ON

A	B	output
0	0	0
0	5	0
5	0	0
5	5	5

$\cong$ AND gate