Roll No. 1904310040

Computer Organization and Architecture

Practical No. 5

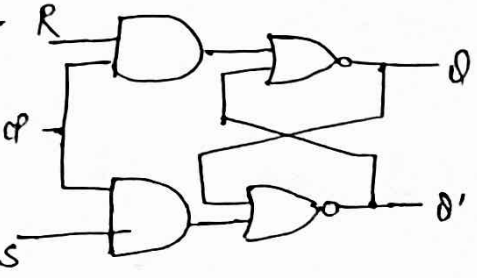
Aim:- Verify the excitation table of various FLIP-FLOPS.

Theory:- Flip-flops are synchronous bi-stable device. The term synchronous means the output change state only when the clock input is triggered. That is change in the output occur in synchronization with the clock. A flip-flop circuit has two ~~input~~ outputs; one for the ~~two~~ normal value and one for the complement value of the stored bit. Since memory elements in sequential circuits are usually flip-flops, it is worth summarizing the behaviour of various flip-flops types before proceeding further. All flip-flops can be divided into four basic types:- SR, JK, D and T.

Excitation Table :-

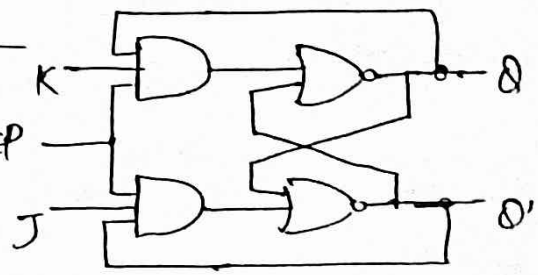
SR Flip-flop:-

Q	Q*	S	R
0	0	0	X
0	1	1	0
1	0	0	1
1	1	X	0



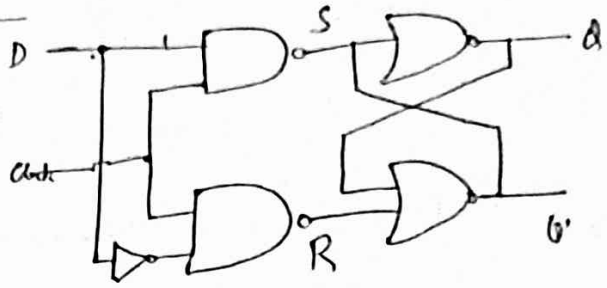
JK Flip Flop:-

Q	Q'	J	K
0	0	0	X
0	1	1	X
1	0	X	1
1	1	X	0



D - Flip Flop :-

Q	Q^*	D
0	0	0
0	1	1
1	0	0
1	1	1



T - Flip Flop :-

Q	Q^*	T
0	0	0
0	1	1
1	0	1
1	1	0