Tutorial 9

ECSE104L

Flip Flop conversion

D to JK flip flop

Excitation table of D flip flop

Qt	Q(t+1)	D
0	0	0
0	1	1
1	0	0
1	1	1

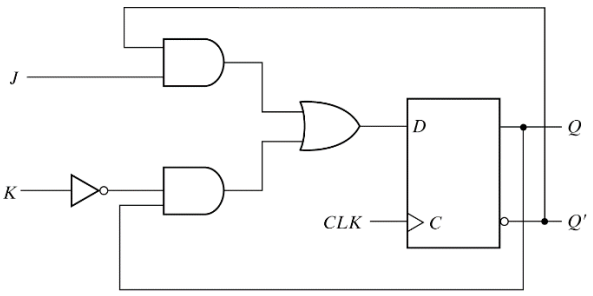
Characteristic table of J-K flip flop

Qt	J	K	Q(t+1)	D
0	0	0	0	0
0	0	1	0	0
0	1	0	1	1
0	1	1	1	1
1	0	0	1	1
1	0	1	0	0
1	1	0	1	1
1	1	1	0	0

Then using K map where inputs are Qt, J, K and output D we will find Boolean equation for D.

D = Qt' J + QtK'

Then we draw the circuit.



Question 1- Convert SR to JK flip flop

Question 2- Design T flip flop using D flip flop.

Question 2- Design the circuit for following state table table using D flip flop

Qt(A)	Qt(B)	**Q(t+1)(A)**	**Q(t+1)(B)**	**D(A)**	**D(B)**
0	0	1	0		
0	1	1	1		
1	0	0	0		
1	1	0	1		