

1. For the following state table,

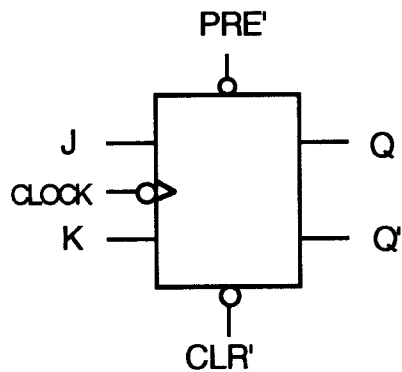
q	q *		z	
	x = 0	x = 1	x = 0	x = 1
A	C	D	0	0
B	B	D	0	1
C	A	A	1	1
D	C	B	1	1

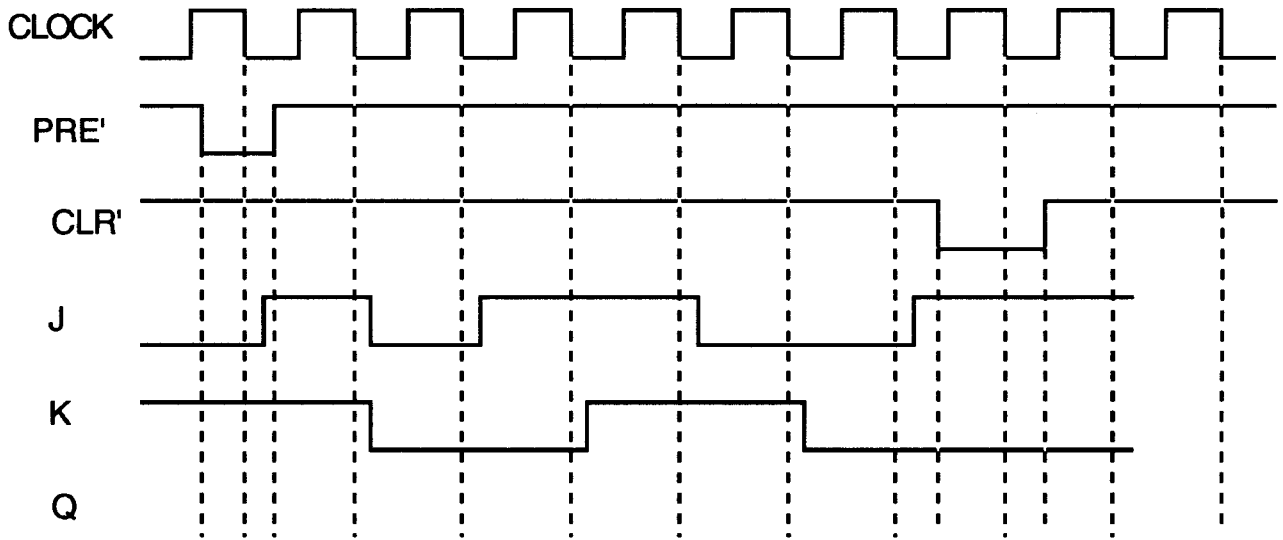
a) Draw a state diagram.

b) Complete the following timing trace as far as you can, even after you no longer know the input.

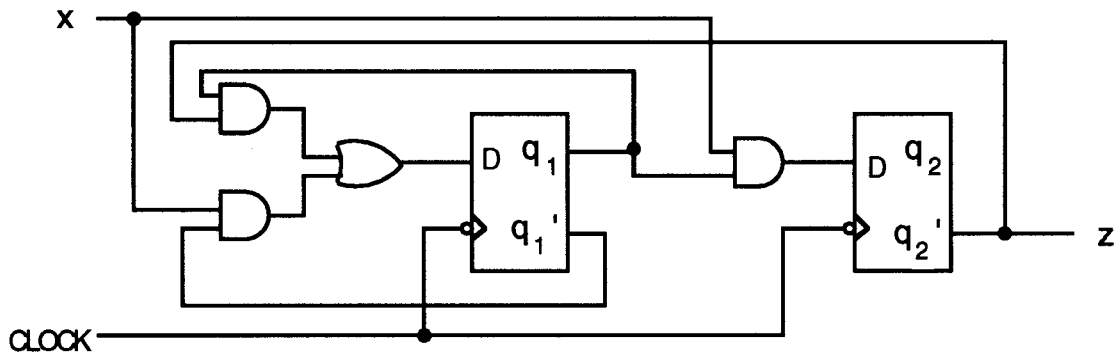
x	0	1	1	1	0	1	0
q	A						
z							

2. For the JK flip flop shown, complete the timing diagram (showing Q for as far as you can).





3. For the circuit shown (with trailing-edge triggered D flip flops), complete the state table.



$q_1 q_2$	$q_1^* q_2^*$		z
	$x = 0$	$x = 1$	
0 0			
0 1			
1 0			
1 1			

4. For the following state table, compute the flip flop inputs and the system output, z , assuming q_1 is a D flip flop and flip flop 2 is a JK flip flop. You just need to show the logic equations.

$q_1 q_2$	$q_1^* \ q_2^*$		z	
	$x = 0$	$x = 1$	$x = 0$	$x = 1$
0 0	1 0	0 1	0	1
0 1	0 1	1 0	0	1
1 0	0 0	0 1	1	1