* Question 1

a)

- Working table for a T flip-flop

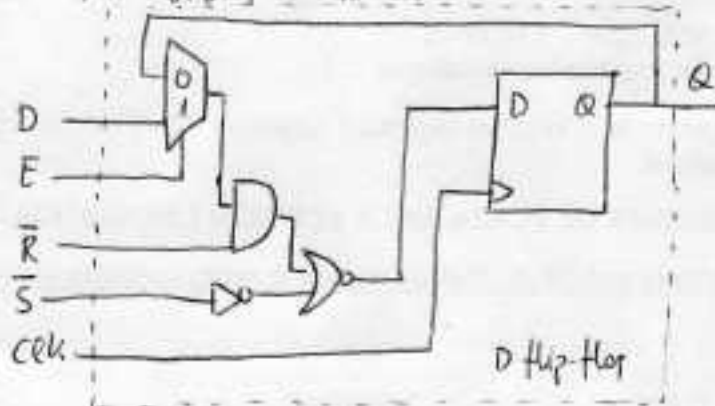| T	Q'
0	Q
1	Q̄

- Working table for a J-k flip-flop

J	K	Q'
0	0	Q
0	1	0
1	0	1
1	1	Q̄

You need to connect the J and K inputs properly to get the working table for the T flip-flop. You can get this making a bridge between J and K, like this:
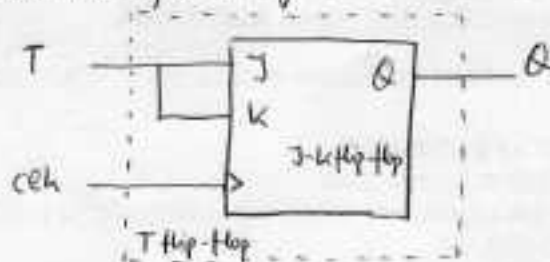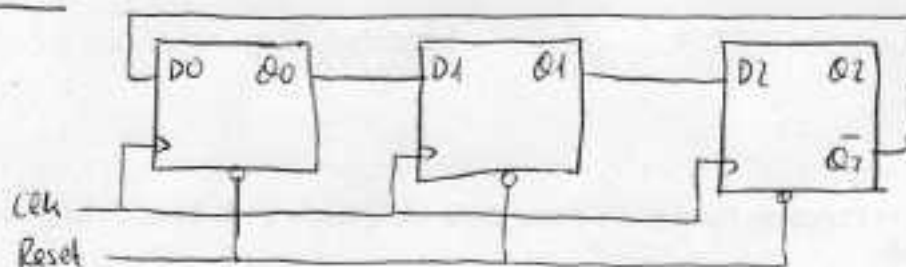

b) The circuit would be the next one:

* Question 2

a)

b)

Cycle	Q_2 Q_1 Q_0
1	0 0 0
2	0 0 1
3	0 1 1
4	1 1 1
5	1 1 0
6	1 0 0
7	0 0 0
8	0 0 1