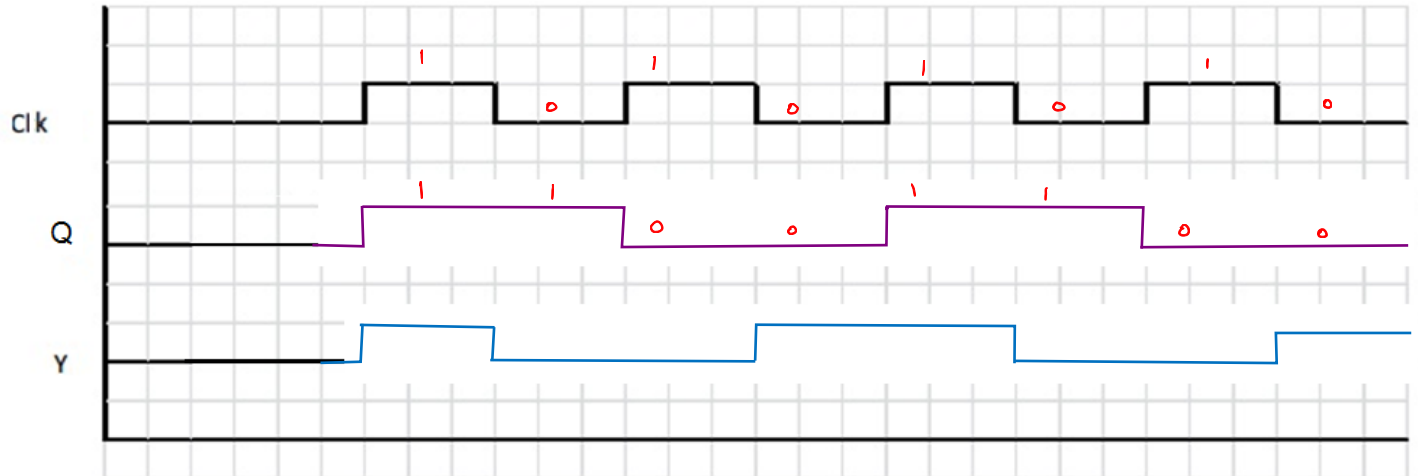
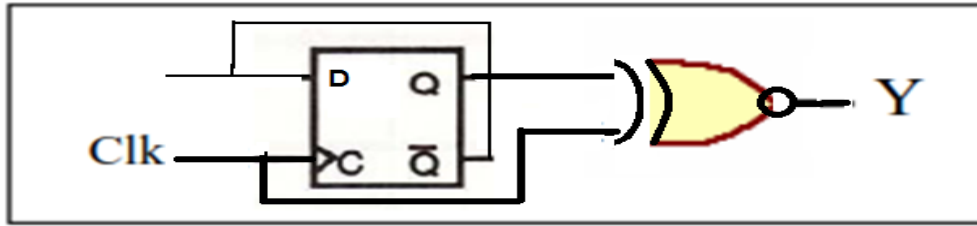
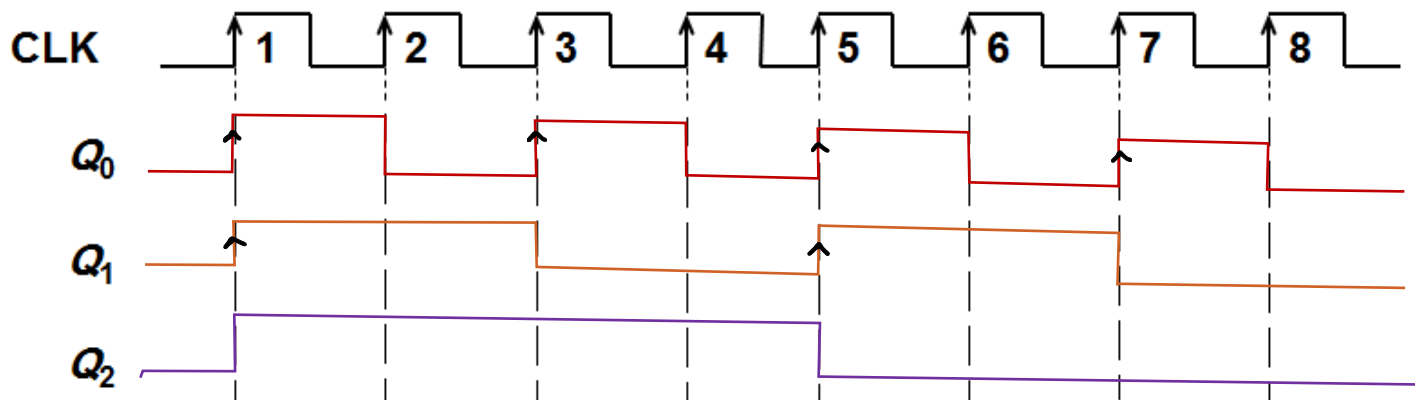
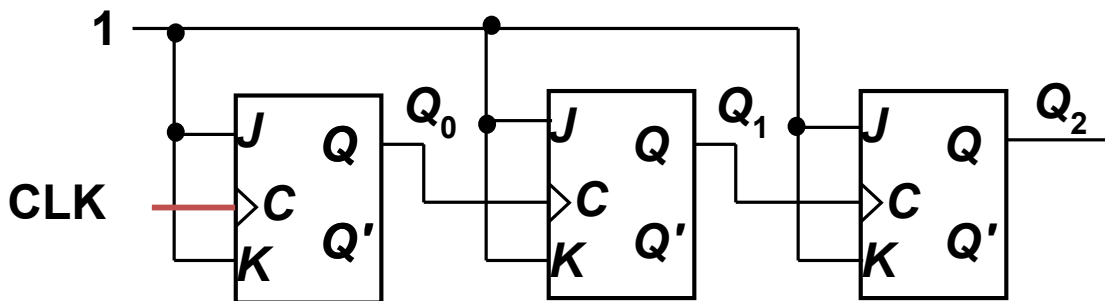


Question 1

(a): For the given diagram below, **draw** the Q and Y activities, assuming Q start at 0?

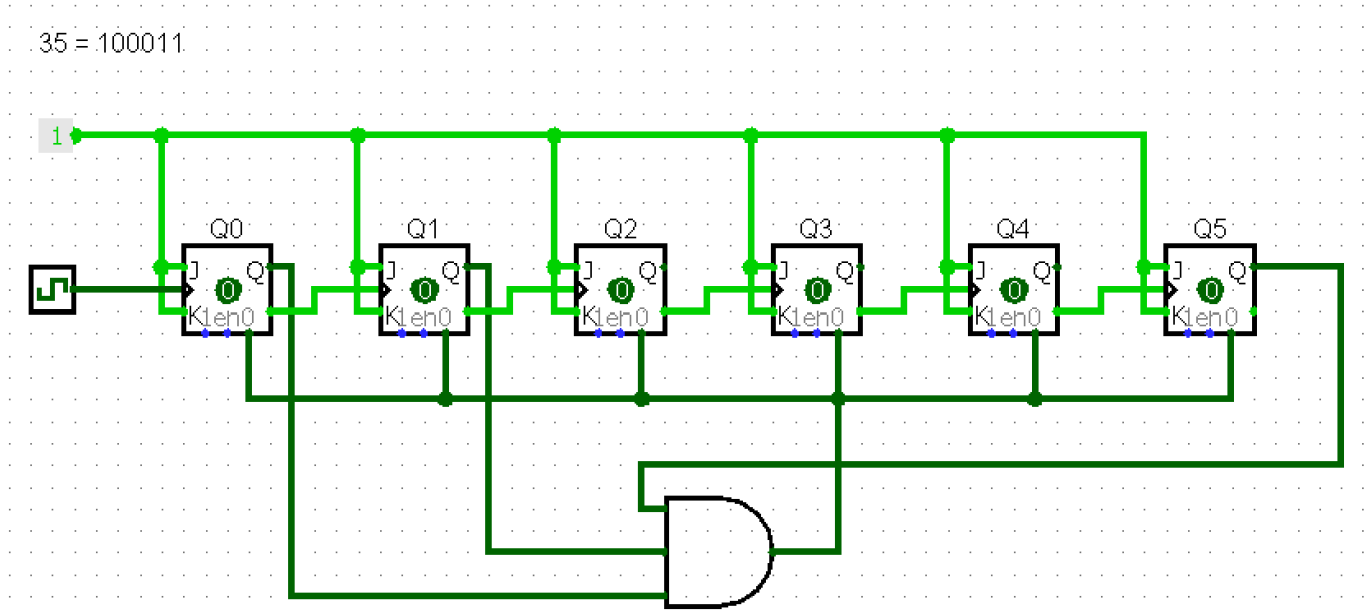


(b) For the following asynchronous counter, draw the output waveform at Q_0 , Q_1 , Q_2 . (assuming that initially $Q_0 = 0$).



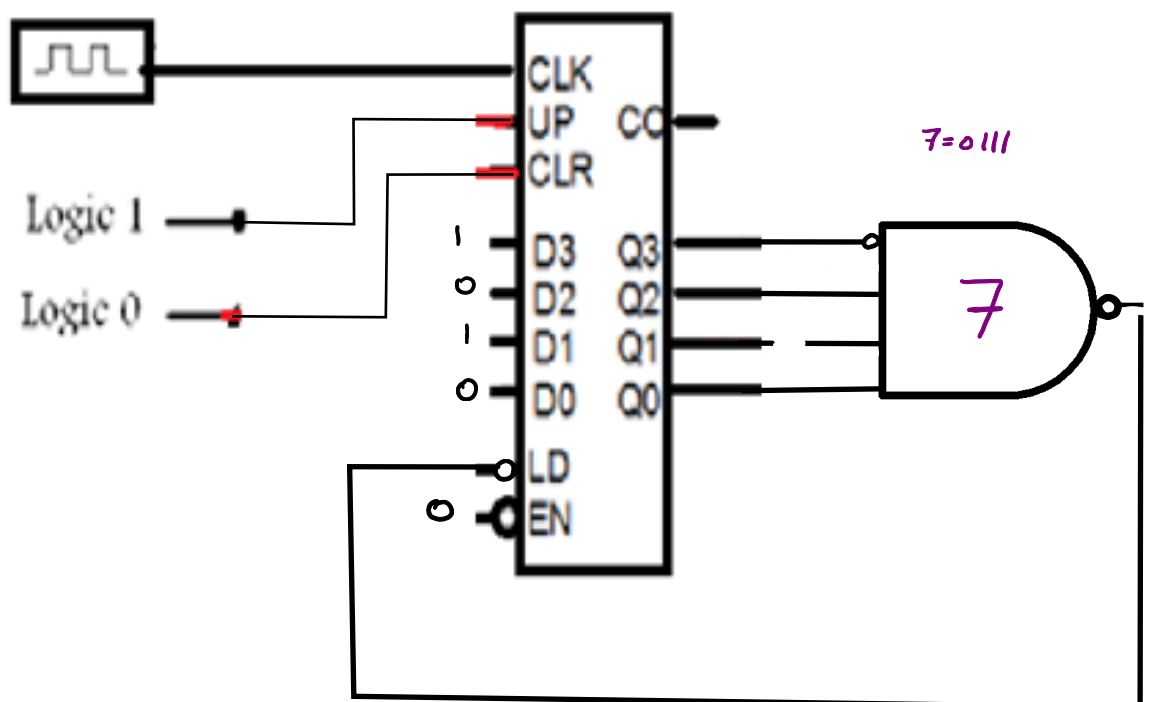
Question 2:

(a) Show how to construct an asynchronous MOD-35 counter.



(b) Configure the counter in the figure below to count the following cycle:

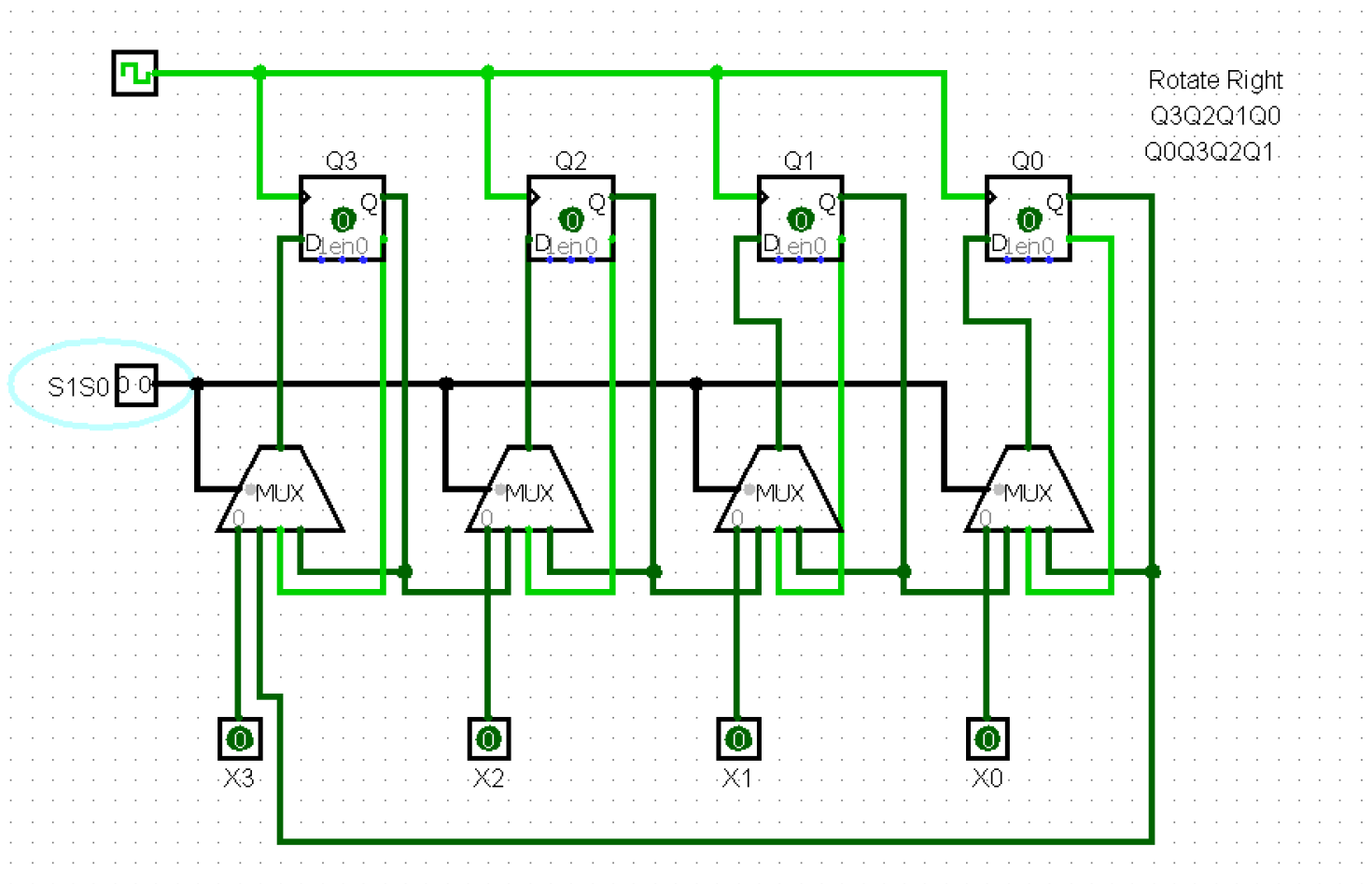
0, 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13/14, 15, 0...



Question 3:

(a) Design a 4-bit register that can perform the following functions

S1	S0	Function
0	0	Parallel Load
0	1	Rotate right
1	0	Complement each bit
1	1	No change



(b) Design a 4×4 RAM Using a 4×4 RAM Cell Array

