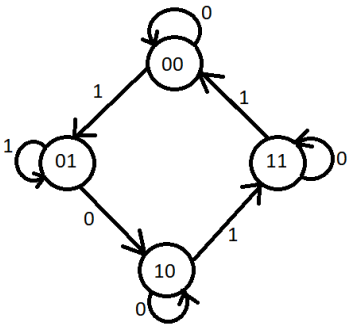
CSE260
Assignment 04

This assignment must be hand-written. Show ALL steps in ALL questions.
YOU NEED TO SUBMIT GRADED QUESTIONS ONLY.

GRADED QUESTIONS (Question 1)

Question 1 (10 Marks):
Given the state diagram as follows, get the sequential circuit using SR flipflop. Show all necessary tables.



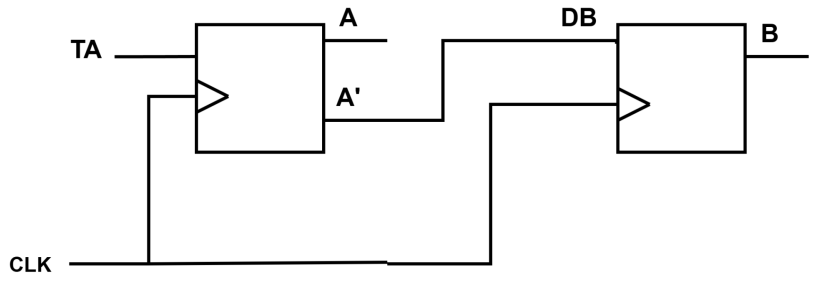
Once you get the circuit diagram, try to build the above state diagram from your circuit diagram. Show all necessary tables.

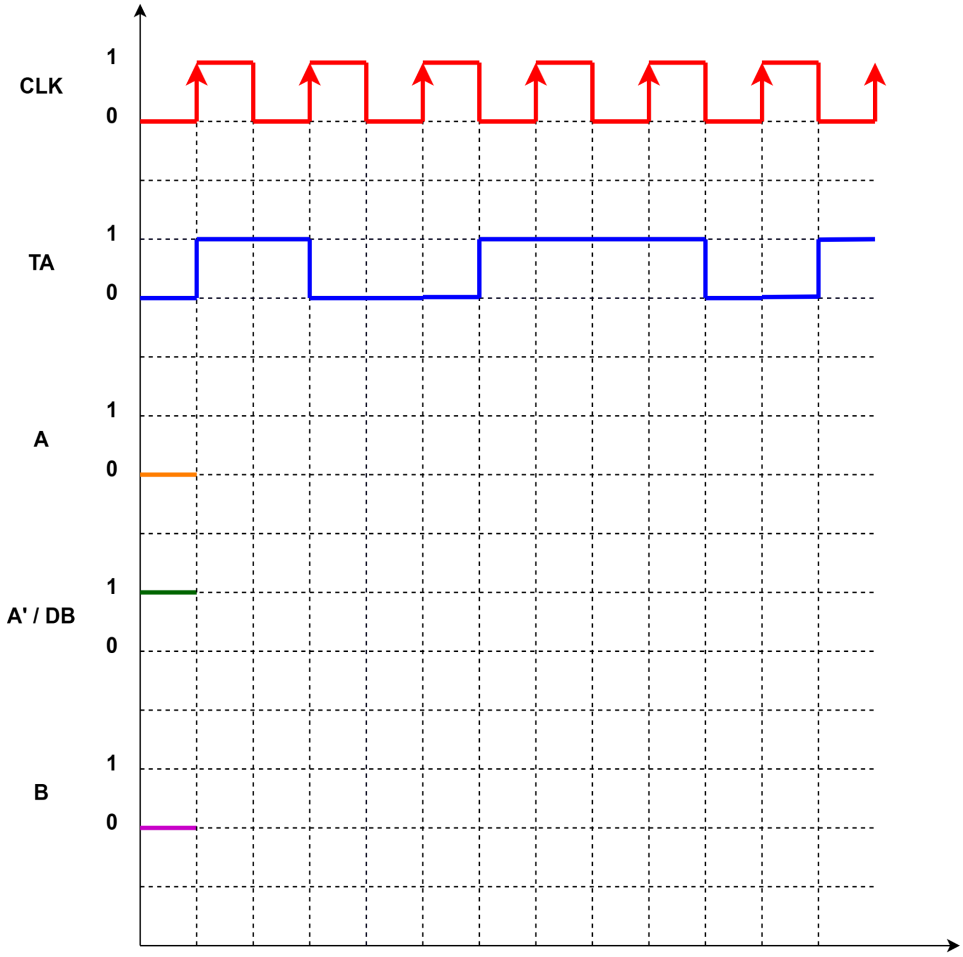
UNGRADED QUESTIONS (2,3,4,5,6,7,8,9,10)

Question 2:
Implement the following counter using T flip flop
CSE110 -> CSE111 -> CSE220 -> CSE221 -> CSE331 -> CSE221 -> CSE321 -> CSE110

Question 3:

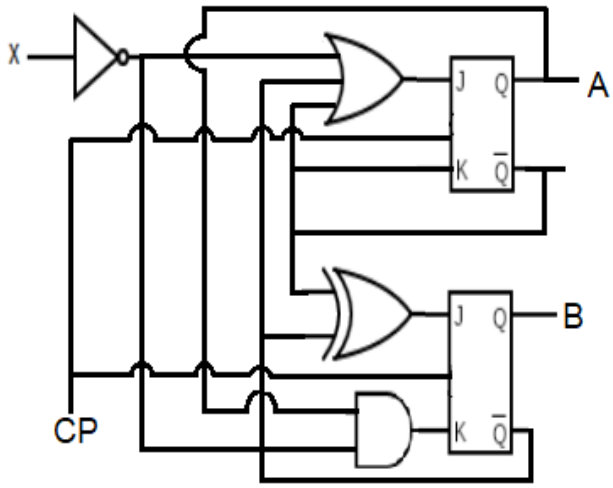
- Draw and complete the timing diagram for the following circuit, where all the flip-flops are positive-edge-triggered. Clock Pulse(CLK) and TA waveforms are given.





Question 4:

Draw the state diagram for the given circuit.



NB: For Question 3, you may have different flip flops in the question. For example, one FF is JK and the other is T.

Question 5:
Implement 3 bits up/down counter using D flip flop

Question 6:
3->4->6->10->12->13->15->3

a. Implement the given counter using JK flip-flop.
b. Implement the given counter using T flip-flop.

NB: For states not given in question, please move to the initial state as per question.

Question 7:
Write the truth table, characteristics table and excitation table for SR, D, JK and T FF.

Question 8:
Implement the following counter using D flip flop
A -> B -> C -> B -> D -> B -> A

Question 9:
What is the total capacity of a 2^{32} x 16 memory?

Question 10:
Draw the block diagram for a 1024x16 RAM.