

MT2 ECE2060 Sp 2022

Show all relevant steps. Don't just write down the answers.

Submit your answers in Word or pdf format to Carmen. Write all your answers on the provided assignment. You can add your own pages to the assignment if you run out of space.

Do not email directly to your TAs or me. Files emailed directly to the TAs or me will not be accepted. Fill out the following

Please provide the following information:

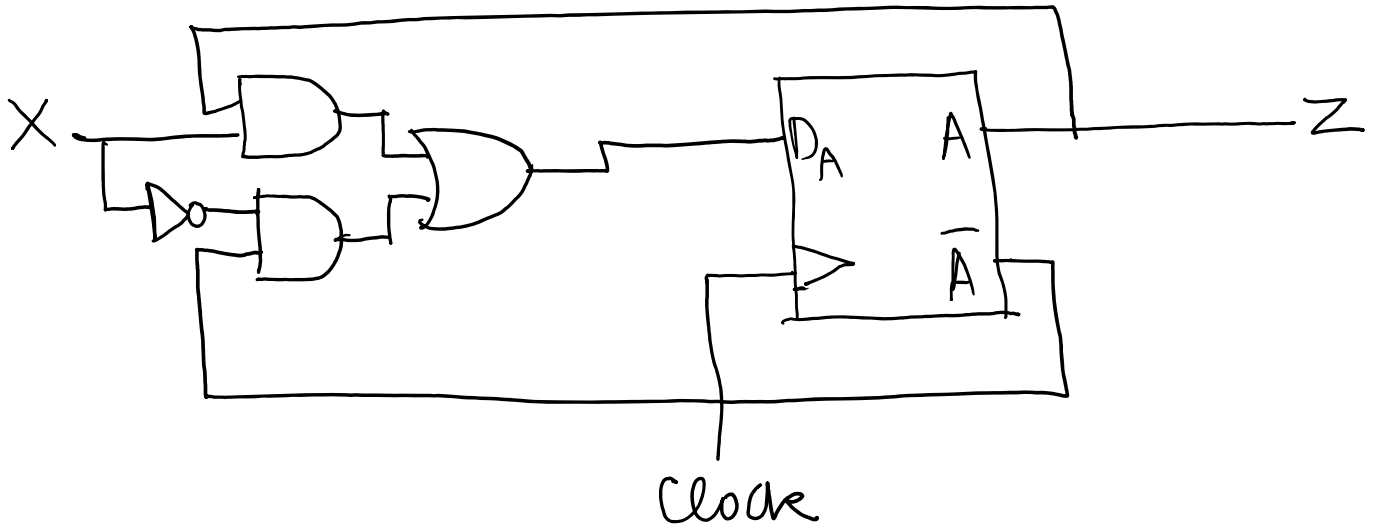
Your Last Name_____

Your First Name_____

OSU email _____

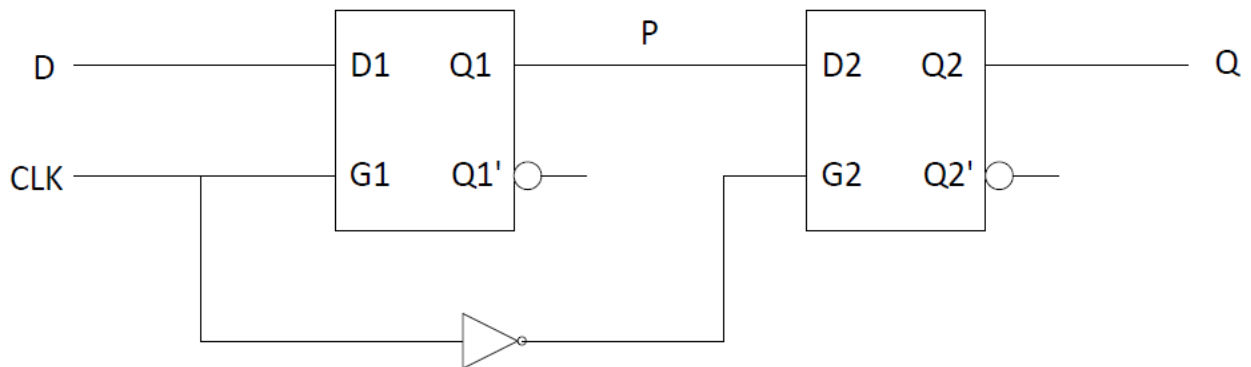
Problem 1 (30 points): Consider the circuit in the figure below.

- i) Is this a Mealy or Moore machine?
- ii) Draw the state graph corresponding to this circuit

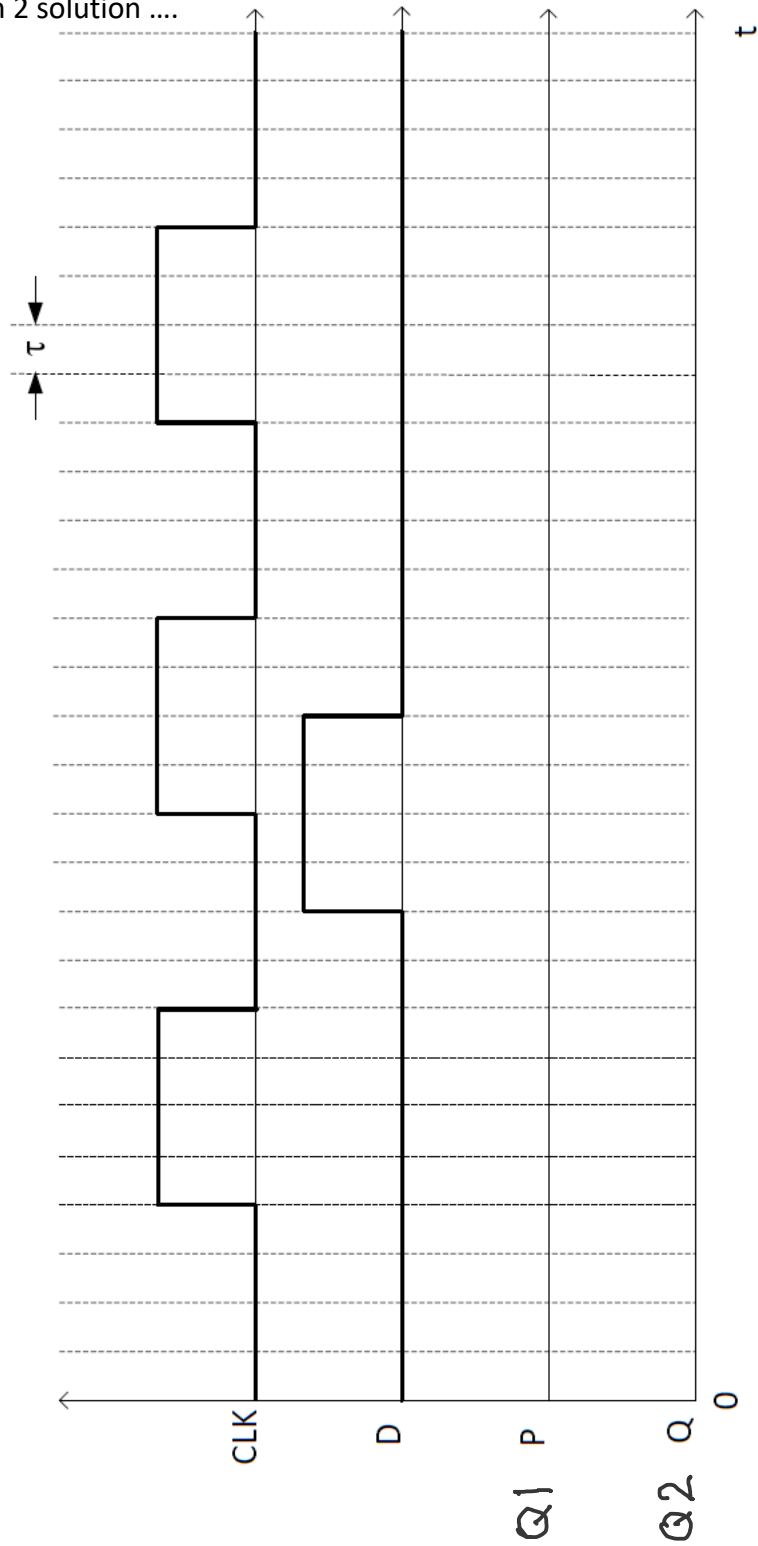


Space for Problem 1 solution

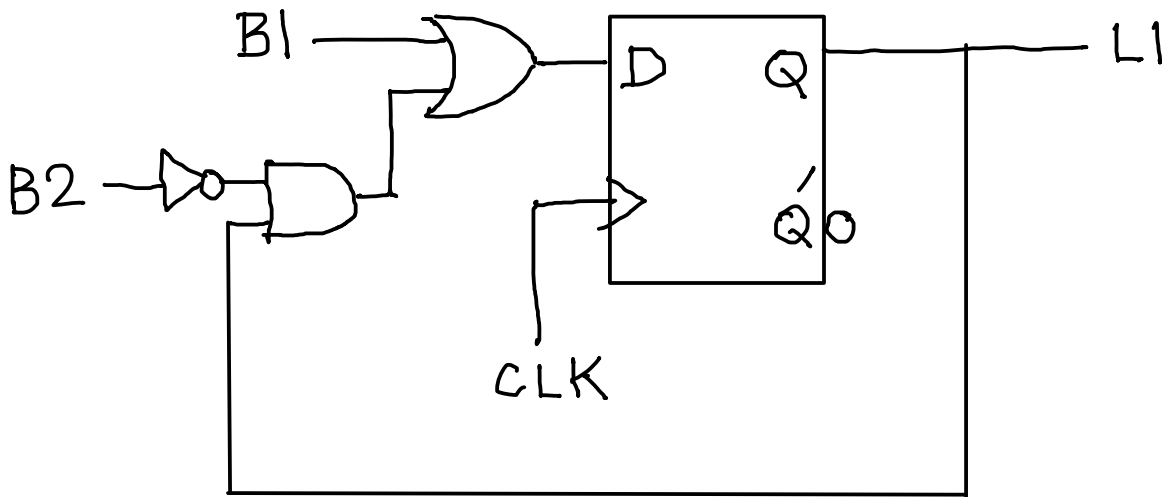
Problem 2 (35 points): Consider the circuit in the figure below containing two **gated D latches**. Given the timing diagrams of CLK and D in the graph on the next page, complete the timing diagrams for Q1 and Q2. Consider that the latches have a delay of τ and the not-gate has zero delay. Assume that $Q1 = 0$ at $t = 0$.
Note: The two components in this circuit are **Gated D-Latches**, not D Flip-Flops.



Space for Problem 2 solution



Problem 3 (35 points): Consider the circuit in the figure below containing a D Flip-Flop. Given the timing diagrams of CLK, B1 and B2 in the graph given on the next page, complete the timing diagrams for D and Q. Consider that the Flip-Flop has a delay of τ and the gates have zero delay. Assume $Q = 0$ at $t = 0$.



Space for Problem 3 solution

