Assignment no 03:

Chapter 3: Sequential Logic Design

Note: You can check the exercises after the Chapter. In our assignment, we are using the 2nd Edition of "Digital Design and Computer Architecture" By David harris and Sarah harris.

Exercise 3.4 Given the input waveforms shown in **Figure 3.64**, sketch the output, Q, of a D latch.

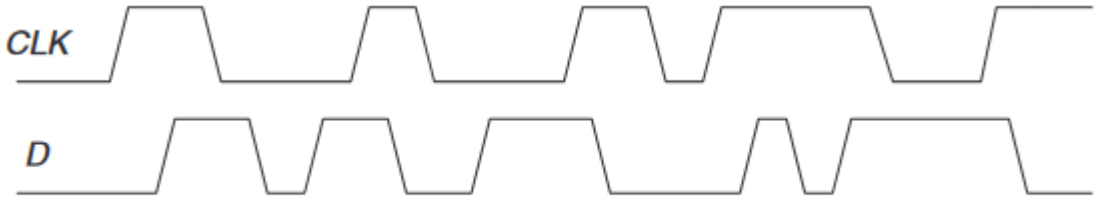

Figure 3.64 Input waveforms of D latch or flip-flop for Exercises 3.4 and 3.6

Exercise 3.6 Given the input waveforms shown in **Figure 3.64,** sketch the output, Q, of a D flip-flop

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Exercise 3.18 Which of the circuits in **Figure 3.68** are synchronous sequential circuits? Explain.

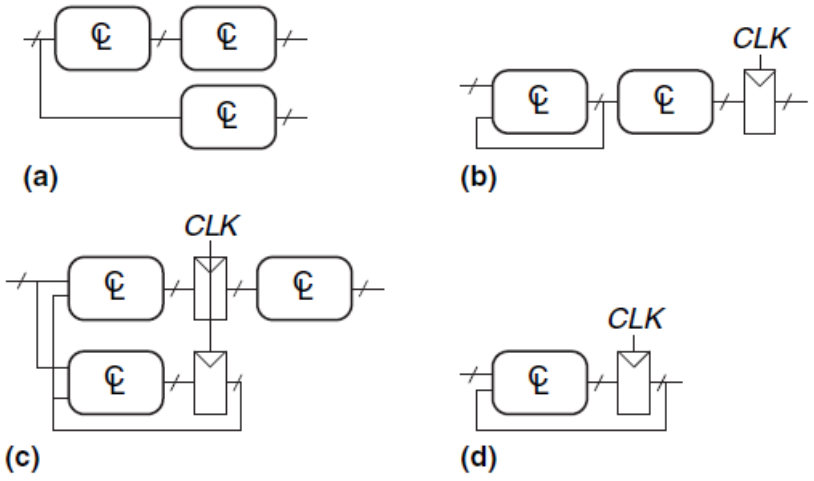

Figure 3.68 Circuits

Exercise 3.24 Accidents are still occurring at the intersection of Academic Avenue and Bravado Boulevard. The football team is rushing into the intersection the moment light B turns green. They are colliding with sleep-deprived CS majors who stagger into the intersection just before light A turns red. Extend the traffic light controller from Section 3.4.1 so that both lights are red for 5 seconds before either light turns green again. Sketch your improved Moore machine state transition diagram, state encodings, state transition table, output table, next state and output equations, and your FSM schematic.
