EGR 270 Due date: See Due Dates Table
Fundamentals of Computer Engineering
File: N270H10

Homework Assignment #10

Reading Assignment:

Chapter 6, Sections 1-6, in Logic and Computer Design Fundamentals, 4th Edition, by Mano.

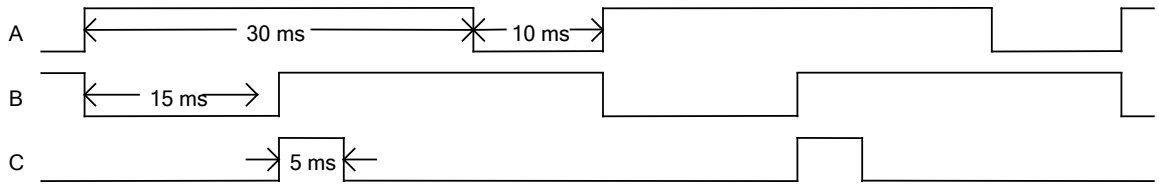
Problem Assignment:

1. Use a timing diagram to determine the counting sequence for the counter shown in Figure 1 (next page) if the counter begins with count 0. As a minimum, include waveforms for the input clock, SA, RA, SB, RB, SC, RC, Q_A, Q_B, and Q_C. Q_A is the MSB.

2. Chapter 6 problems 5, 6, 8, 11, 14

3. A) Sketch the waveforms CP, A, B, C, D, Q1, and Q2 for the circuit shown in Figure 2 (next page).
   B) For how many clock pulses is Q1 HIGH? For how many clock pulses is Q2 HIGH?
   C) Modify the circuit so that Q1 goes HIGH at the end of count 7 and stays HIGH for 2 clock pulses. Q2 should go HIGH at the end of count 9 and remain HIGH for 11 clock pulses.

4. Design a circuit to produce the following waveforms:



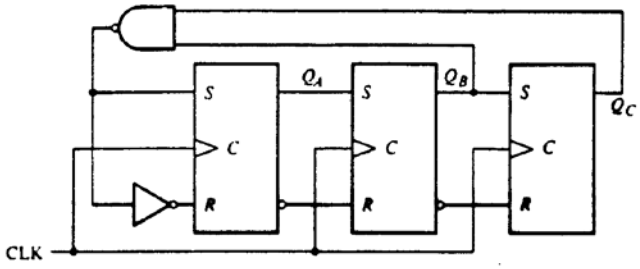


Figure 1

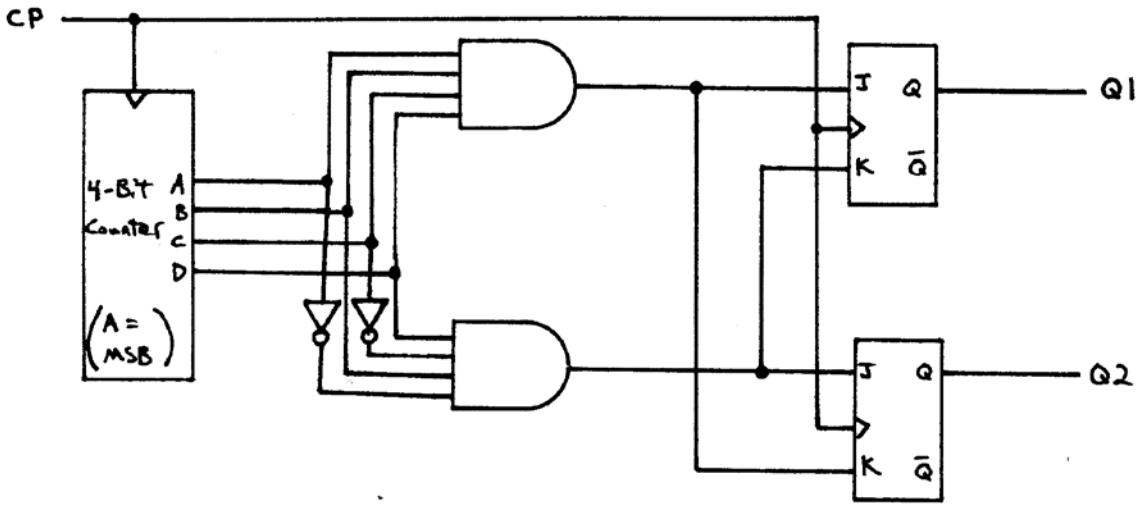


Figure 2