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

**Late HWs will not be accepted.** Lecture Students: turn in your HW in class. Recitation students: turn in your HW at the ECE Office Front Desk. *HWs turned-in anywhere else will not be accepted.*

Show your work on these pages, attach additional pages if necessary.

- Be sure to organize the pages in order and staple them all together, otherwise you will lose one point

- Fill out the following section. **You will lose an additional point if you fail to provide these details**

  Your Last Name_____________________________  Your First Name____________________________

  1. Lecture Student __________ or Recitation Student__________ (check one)
  2. If Recitation then fill out the following
     Name of recitation instruction________________________ Date/time of recitation________________

Problems start from next page. Each problem is worth 2 points.
The problem numbers are from your text book (both the 6th and 7th edition will work)

1) Simplified Problem 7.35 (a-i): Realize the following function using only two-input NAND gates.

\[ F = B(A'C' + D) + (A + B'D')C \]
The problem numbers are from your text book (both the 6th and 7th edition will work)

2) Simplified Problem 7.35 (a-ii): Repeat the previous problem by using only two-input NOR gates.
The problem numbers are from your text book (both the 6th and 7th edition will work)

3) Simplified Problem 7.36 (b): Realize the following function using only two-input NAND gates. Add inverters where necessary

\[ F = (B + (A' + C')D) (A(B' + D') + C) \]
The problem numbers are from your text book (both the 6th and 7th edition will work)

4) Simplified Problem 7.36 (c): Repeat the previous problem by using only two-input NOR gates.
The problem numbers are from your text book (both the 6th and 7th edition will work)

5) Problem 7.37: Realize the following function using NOR gates. Add inverters where necessary

\[ Z = A[BC' + D + E(F' + GH)] \]