# CpE 2210 Homework Assignment #3 Max – 100pts

HW#3 is due at the beginning of class on Wednesday, March 6, 2019. You must always show or explain your work in a neat and orderly format. You are encouraged to discuss ideas with other students and consult references but your work must be your own.

1. Construct a truth table of F = AB + C. Then, represent this function in CSOP (Canonical Sum-of-Product) form. Then, represent this function using minterm notation.

2. Construct a truth table of F = AB + BC. Then, represent this function in CPOS (Canonical Product-of-Sum) form. Then, represent this function using maxterm notation.

3. Given F = AB + BC + AC, represent this function in CSOP form using Boolean identities. You need to show each step and Boolean identity used.

4. Design an AND-OR PLA (Programmable Logic Array) that implements the functions.





5. Design an OR-AND PLA for the functions.







6. Find BCD code words for the following decimal numbers.

(a) 425

(b) 17

(c) 2039

7. For the BCD-to-7-segment decoder, find the minimum SOP and minimum POS forms of the functions c and d using K-maps. (15pts)

8. Using K-maps, determine the minimum SOP and minimum POS forms for each of the following Boolean functions. (15pts)

a. f(x,y,z) = Σm(0,1,2,3,4,6,7)

b. f(w,x,y,z) = Σm(1,3,4,6,7,9,11,13,15)