Homework 2

Due Date:2/22/2018

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Note : [A'] is same as [$\bar{A}$]

1. Prove the identity of the following Boolean equations using algebraic manipulation (10 points)
   a. WY + W'YZ' + WXZ + W'XY' = WY + W'XZ' + X'YZ' + XY'Z

2. Draw the logic diagram for the following Boolean expressions. (10 points)
   a. AC(B'+D) + A'C(B'+D') +BC(A'+D')

3. Given that A.B=0 and A+B=1, prove that (10 points)
   a. (A+C).(A'+B).(B+C) =B.C

4. Find the complement of the following expressions (5 points)
   a. (V'W+X)Y +Z'

5. Obtain truth table of the following function, and express each function in sum-of-minterms and product-of-maxterms form (5+5+5=15 points)
   a. (A'+B)(B'+C)

6. Optimise the following functions in (i)sum of products and (ii)products of sum forms. (10 *4= 40 points)
   a. F(A,B,C,D)= $\prod$m(1,3,4,6,9,11),d(A,B,C,D)= $\sum$m(0,2,5,8,10,12,14)
   b. F(A,B,C,D)= $\sum$m(0,2,4,5,8,14,15),d(A,B,C,D)= $\sum$m(7,10,13)