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COE 202, Term 162
Fundamentals of Computer Engineering

Quiz# 2

Date: Sunday, March 5

Q1. Using algebraic manipulation, simplify the following functions into minimum number of literals in sum-of-product form:

a. $F(A,B,C) = AB'C + B'C' + AB'C' + A'C'$

b. $F(X,Y,W,Z) = Y + X'Y'WZ + Y'WZ + X'YWZ' + Y'W'Z + XYWZ'$

Q2. Find the complement of the following function without any simplification:

$$F = (XY + Z) \cdot W' + E D'$$

Q3. Consider the following function:

$$F = X Y + (X' + Z)(Y + Z')$$

- a. Express F as a sum of minterms using $F = \sum m()$ notation.
- b. Express F as an algebraic sum of minterms.
- c. Express F as a product of maxterms using $F = \prod M()$ notation.