CE 211
Digital Systems
Homework # 3

Note: To get the full mark, you need to show all the steps in details (Final answers are not acceptable).

Part 1:

Question 1: Given $F(A,B,C,D) = \sum_m(0,1,2,4,5,7,11,15)$

(a) Find **all the essential prime implicants** and indicate why each one is essential.

(b) Find **all the possible** minimum sum of product expressions for F.

Question 2: Given $F(A,B,C,D) = \sum_m(0,1,4,6,7,9,11,13,14) + \sum d(2,5,12)$

(a) Find **all the essential prime implicants** and indicate why each one is essential.

(b) Find **all the possible** minimum sum of product expressions for F.

Part 2:

The problems below are from the Textbook (5^{th} edition, International edition):

Chapter 3:

Question 1. Problem 3.2 (f)
Question 2. Problem 3.4 (f)
Question 3. Problem 3.5 (c)
Question 4. Problem 3.6.(c) and (d)
Question 5. Problem 3.11
Question 6. Problem 3.15 (c)