CSE260 Assignment - 2

Deadline - 11th March

Marks : 70

Assignment must be handwritten. Submit the Hard Copy in Class on 11th March

1. Simplify the following boolean expression: 5 x 2 = 10

a. xyz' + x'yz + xyz + x'yz'

b. (x + y' + z')(x' + z')

2. Find the complement of the following expression: 5 x 2 = 10

a. (a 'b + cd)e' + e

b. (x' + y + z')(x + y')(x + e)

3. Draw the following functions using NAND gates only: 5

F(A,B,C,D)=(ABCD + A'D' + (B'+D)')'

4. Draw the following functions using NOR gates only: 5

F(A,B,C,D)=(ABCD + A'D' + (B'+D)')'

NB: Please draw horizontally on your script. Do not simplify the given boolean expression for Questions 3 & 4. Use a maximum of 2 inputs for each gate.

5. Simplify the following boolean functions using laws of boolean algebra and draw the simplified function using NAND gates Only. 10

a. $F(a,b,c,d) = \sum(2,5,7,10,11,13)$

6. Simplify the following boolean functions using laws of boolean algebra and draw the simplified function using NOR gates Only. 10

a. $F(x,y,z) = \sum(2,3,5,6,7)$

7. Convert each of the following to Canonical SOP & POS form: 10 x 2 = 20

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

b. F (W,X,Y,Z) = WX'Y + W'Y'