**Tutorial Sheet-ODD Semester 2022**

**15B11CI212 Theoretical Foundation of Computer Science**

**Tutorial 8**

**Note: Complete the Tutorial-7 also.**

1. Find the sum-of-products expansions of these Boolean functions.
   1. F (x, y, z) = x + y + z
   2. F (x, y, z) = (x + z)y
   3. F (x, y, z) = x
   4. F (x, y, z) = x y
2. Minimizing a Function with Don’t Cares.
   * 1. *f(A,B,C,D) =* ∑*m*(1,3,4,7,11) + *d*(5,12,13,14,15)
     2. *f(A,B,C,D) =*∏*M*(0,2,6,8,9,10) ∙ *D*(5,12,13,14,15)

Q.3 Simplify the Boolean expressions:

(i) (X +Y) ( X+ ~Y ) (~ X +Z)

(ii) XYZ + X ~Y Z + XY ~ Z

Q.4 Minimize the following expression by use of Boolean rules.

(a) X = A B C + ~ A B + A B ~ C

(b) X = ~ A B ~ C + A ~ B ~ C + ~ A ~ B ~ C + ~ A ~ B ~ C