Guided Work Series No. 04

Exercise 1:

Let the following functions:

1. $f(x, y, z) = (x + \bar{y})(\bar{x} + z)(z + \bar{y})$
2. $f(w, x, y, z) = w\bar{z} + (\bar{w} + \bar{x})y\bar{z} + \bar{w}\bar{z}\bar{x}$

☞ Write f in canonical form sum of minterms .

☞ Write f in canonical form product of Maxterms .

Exercise 2:

Let the following functions:

1. $f(x, y, z) = x.\bar{y} + \bar{y}.\bar{z}$
2. $f(A, B, C, D) = A\bar{B} + \bar{A}BC + \bar{C}\bar{D}$

☞ Give the karnaugh table for each function.

Exercise 3:

Consider the following function:

$f(x, y, z) = x + y.(x + z) + \bar{x}.\bar{y}$

1. Write f in canonical form sum of minterms .
2. Derive the formula for f in canonical product form of Maxtermes .
3. Simplify the function using the Karnaugh table .
4. Give the flowchart of the simplified function.

Exercise 4:

Consider the following function:

$f(x,y,z,w) = \Sigma (1,3,4,6,7,8,10,11,13)$

1. Give the truth table of this function.
2. Simplify this function using the Karnaugh table .
3. Give the diagram of the logic circuit.