Guided Work Series No. 04

Exercise 1:

Let the following functions:

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

☞ **Write f in canonical form sum of minterms .**

☞ **Write f in canonical form product of Maxterms .**

Exercise 2:

Let the following functions:

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

☞ **Give the karnaugh table for each function.**

Exercise 3:

Consider the following function:

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

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:

$f(x,y,z,w) = \Sigma(1,3,4,6,7,8,10,11,9)$

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