Assignment

Unit – 4

1. Show that the set {1, 3, 4, 5, 9} is an abelian group under multiplication modulo 11 as composition.
2. Prove that G = ({0, 1, 2, 3, 4}, $\oplus_5$) is a cyclic group with generators 1 and 4.
3. Show that the permutation $\begin{bmatrix} 1\ 2\ 3\ 4\ 5\ 6 \\ 5\ 6\ 2\ 4\ 1\ 3 \end{bmatrix}$ is odd,

   While the permutation $\begin{bmatrix} 1\ 2\ 3\ 4\ 5\ 6 \\ 6\ 3\ 4\ 5\ 2\ 1 \end{bmatrix}$ is even.

4. Reduce F(a, b, c, d) = Σ (0, 2, 7, 8, 10, 15) using K- Map.
5. Reduce F(a, b, c, d) = π (0, 1, 3, 5, 6, 7, 10, 14, 15) using K- Map