

CHAPTER 3 : DESIGN OF DISTRIBUTION SYSTEM

ASSIGNMENT -3

- ✓ What are the factors which affects the type of distribution system chosen under different conditions in the area?
- ✓ A three-phase four wire 400/230 V distribution system is loaded as below. a) A 3-phase induction motor load of 250 kW at 0.8 power factor lagging b) Single-phase resistance load of 200 kW between R and N c) Single-phase resistance load of 150 kW between Y and N d) Lightning load of 150 kW between B and N. Find (1) line currents, (2) power factor of the distribution system loads and (3) current in the neutral. Represent the result with help of phasor diagram.
- ✓ Discuss the steps for planning and designing of electrical distribution schemes.
- ✓ Explain the methods of designing primary-distribution system with reference to (a) choice of voltage (b) conductor size (c) type of distribution and (d) Voltage drops
- ✓ State and explain kelvin's law for most economical size of conductor.
- ✓ A 2 wire dc distributor AB is fed from both ends. At the feeding point A voltage is maintained at 240 V and at feeding point B voltage 254V. The total length of distribution is 200 meters and load are tapped off as under: 25 A at 50 meters from A; 50 A at 75 meters from A; 30 A at 100 meters from A; 40 A at 150 meters from A. If the resistance per km of one conductor is 0.3 ohm. Calculate (I) The current in the various sections of the distributor. (II) The minimum voltage and the point at it occur