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| **S NO** | **QUESTION** | **KNOWLEDGE**  **LEVEL** | **CO** |
| **UNIT I** | | | |
| **1** | Compare between AC and DC distribution system. | K4 | CO1 |
| **2** | Explain various factors that are to be considered in selecting a substation location? | K2 | CO1 |
| **3** | Describe the design features of distribution systems. | K2 | CO1 |
| **UNIT 2** | | | |
| 1 | Explain about the classification of distribution system. | K2 | CO1 |
| 2 | Discuss the radial and loop types of primary feeders. | K2 | CO1 |
| 3 | A 3-phase 4.16Kv grounded feeder main has 4 copper conductors with an equivalent spacing of 1.0m between phase conductors and a lagging load power factor of 0.9. Determine the ‘K’ constant of the main feeder. Let r=1.503 ohms/meter and x=0.7456 ohms/meter. Also calculate the percent voltage drop in the main if a lumped sum load of 500KVA with a lagging power factor of 0.9 is connected at the end of 1meter long feeder main. | K2 | CO1 |
| **UNIT 3** | | | |
| **1** | A 3-phase radial express feeder has a line to line voltage of 22.0Kv at the receiving end, a total impedence of 5.25+j10.95 ohms/phase and a load of 5MW with a lagging power factor of 0.90 determine the following  i) Line to neutral voltage and line to line voltages at the sending ends.  ii) Load angle. | K2 | CO1 |
| **2** | Explain the various factors that influence the voltage levels in design and operation of the distribution system? | K2 | CO1 |
| **3** | List out the advantages of optimally located substation? | K1 | CO1 |
| **UNIT 4** | | | |
| **1** | Explain the general coordination procedure? | K2 | CO3 |
| **2** | Explain the recloser to fuse coordination with neat diagrams? | K2 | CO3 |
| **3** | Describe the main objective of distribution system protection? Explain in detail. | K2 | CO3 |
| UNIT 5 | | | |
| **1** | A 3ϕ, 500HP, 50Hz, 400V star connected Induction Motor has a full load efficiency of 88%. A lag p.f of 0.75 and is connected to a feeder. It is desired to connect to p.f of the load a lagging p.f to 0.9 by three capacitor at to load. Determine the following:  i)Rating of the capacitor bank.  ii)Capacitance of each unit if capacitors are connected in delta to star. | K3 | CO4 |
| **2** | Explain the economic justification for installation of capacitance? | K2 | CO4 |
| **3** | Demonstrate the Automatic voltage regulator. | K3 | CO4 |
| **4** | Discuss the effect of shunt capacitor. | K2 | CO4 |
| **UNIT 6** | | | |
| **1** | Describe the types of equipment for voltage control with neat diagrams? | K2 | CO4 |
| **2** | Demonstrate the Automatic voltage regulator. | K3 | CO4 |
| **3** | Explain the line drop compensation on voltage control? | K2 | CO4 |