

23261

**M.Tech 1st Semester (Electrical Power System)
Examination, December-2017**

ELECTRICAL DISTRIBUTION SYSTEM

Paper-MTEPS-105

Electric-I

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt any five questions.

1. Explain the characteristics of different loads and loads model. 20
2. (a) Discuss about radial and loop type of primary feeders. 10
(b) Derive the equation for load power factor for which voltage drop is minimum in terms of line parameters (resistance and reactance). 10
3. Give the standard voltage levels adopted for distribution system in India. What are reasons for the choice ? Compare these levels with practice in Europe and US. 20
4. (a) Derive an expression for voltage drop and power loss in a line. 10
(b) Explain how voltage drop with a main feeder and a cable insulator is estimated ? 10

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5. How the equivalent impedance compared for a L-L and L-G fault occurring on distribution line with source impedance (Z_s), distribution line, transformer and fault impedance (Z_f)? 20
6. (a) How is the coordination between main fuse and sectional fuse achieved? 10
(b) What are the different protection schemes for a feeder? 10
7. (a) Compare and explain the role of shunt and series capacitor in power factor correction. 10
(b) How is the capacitor bank rating obtained when the load power factor is to be improved from $\cos \theta_1$ to $\cos \theta_2$. 10
8. (a) Why is the voltage control required in power system? Mention the different methods of voltage control employed in power system. Explain one method of voltage control in detail giving a neat connection diagram. 15
(b) Write a short note on line drop compensation. 5