

13EE41E2-ELECTRICAL DISTRIBUTION SYSTEMS

(EEE)

Lectures/Week: 4Hrs.
End Exam Duration: 3Hrs

Credits: 4
Sessional Marks: 40
End Exam Marks: 60

UNIT-I

INTRODUCTION TO DISTRIBUTED SYSTEMS: Introduction, classification of loads (Residential, Commercial, and Agricultural & Industrial) and their characteristic – an overview of rate of Computers in distributed system planning, load modeling and characteristics, coincidence factor contribution factor and loss factor.

UNIT-II

DESIGN OF DISTRIBUTED NETWORKS: Distribution feed back & substation – design considerations of distribution feeders – radial & loop types of primary feeders – voltage levels – feeder loading.

LOCATION OF SUBSTATIONS: Rating of distribution substations – service area with ‘n’ primary feeders. Benefits of optimal location of substations.

UNIT-III

DISTRIBUTION SYSTEM ANALYSIS: Voltage drop & power loss calculations – Derivation of voltage drop & power loss in lines – manual methods of solution for radial networks - 3 ϕ balanced primary lines.

UNIT-IV

PROTECTIVE DEVICES & CO-ORDINATION: Objectives of distribution system protection, types of common faults and procedure for fault calculations – protective devices – principles of operation of fuses – circuit breakers – general co-ordination procedure.

UNIT-V

POWER – FACTOR & VOLTAGE CONTROL IMPROVEMENT: Capacitive compensation for power factor control – Different types of power capacitors – shunt & series capacitors – power factor correction – procedure to determine best capacitor location & equipment for voltage control.

TEXT BOOKS:

1. Electrical Power Distribution System Engineering – Turan Gonen, MC – Graw Hill
2. Electric Power Distribution by A.S. Pabla, Tata MC Graw Hill Company