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10EE844

Eighth Semester B.E. Degree Examination, June/July 2018
Electrical Distribution System

Time: 3 hrs.

Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Explain the factors affecting distribution system planning. **(08 Marks)**
    b. Explain the system approach in distribution system planning. **(06 Marks)**
    c. Write a note on distribution automation and mention its objectives. **(06 Marks)**

2   a. Define the following terms :
     i) Demand factor   ii) Utilization factor   iii) Diversity factor
     iv) Co-incident demand   v) Connected load   vi) Load diversity. **(06 Marks)**
    b. Derive the relationship between load factor and loss factor. **(08 Marks)**
    c. Assume that the riverside distribution substation of the NL and NP company supplying a small city, which experiences an annual peak load of 3500kW. The total annual energy supplied to the primary feeder is 10,000,000 kwh. The peak demand occurs in March due to air conditioning load.
     i)   Draw an approximated monthly load curve
     ii)   Find the annual average power demand
     iii)   Find the annual factor **(06 Marks)**

3   a. Explain the process of planning in distribution system. **(10 Marks)**
    b. Describe the different stages involved in system development process of distribution system planning. **(10 Marks)**

4   a. Write a note on dispersed generation. **(05 Marks)**
    b. Explain the financial analysis of distribution system. **(05 Marks)**
    c. Explain Geographical information system in distribution system. **(10 Marks)**

PART – B

5   a. Explain the engineering design in distribution system. **(04 Marks)**
    b. Write a note on design criteria and standards in distribution system. **(06 Marks)**
    c. Explain the feeder system in distribution system. **(10 Marks)**

6   a. What are the effects of harmonics in distribution network? **(05 Marks)**
    b. Write a note on voltage control in distribution system. **(05 Marks)**
    c. Explain the energy management scheme in distribution system. **(10 Marks)**

7   a. Explain the following :
     i)   Data concentrator unit
     ii)   Human machine interface. **(06 Marks)**
    b. Describe the sensors in distribution automation **(06 Marks)**
    c. Write a note on hardware configuration of SCADA. **(08 Marks)**

8   a. Explain the typical network configuration with its switching arrangements in distribution system. **(10 Marks)**
    b. What are the applications of linear programming in network synthesis? **(10 Marks)**

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