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Eighth Semester B.E. Degree Examination, June/July 2016
Electrical Distribution Systems

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.*

PART – A

- 1 a. Explain the different techniques used in distribution system planning in future. (10 Marks)
b. With neat diagram, explain the factors affecting load forecast and substation sitting in system planning. (10 Marks)
- 2 a. Derive the relationship between the load and loss factors. (10 Marks)
b. Explain the following terms :
i) Utilization factor ii) load diversity. (04 Marks)
c. Briefly explain load growth in distribution systems. (06 Marks)
- 3 a. Explain the basic principles in distribution system planning with its planning actions. (08 Marks)
b. Explain the various types of feeders in feeder system. (04 Marks)
c. Briefly explain the operation criteria and standards in planning process. (08 Marks)
- 4 a. Write short notes on financial analysis. (06 Marks)
b. Explain in detail economics and finance in distribution system. (10 Marks)
c. Draw the block diagram of digital mapping process. (04 Marks)

PART – B

- 5 a. Draw flow diagram of the design process. Explain the concept of improving system efficiency. (10 Marks)
b. Explain distribution substation with :
i) Single bus substation (10 Marks)
ii) Ring or mesh bus substation.
- 6 a. Briefly explain voltage control and effects of harmonics on network. (10 Marks)
b. Explain the energy management system scheme. (10 Marks)
- 7 a. With neat block diagram, explain SCADA system. (10 Marks)
b. Write short notes on :
i) Packet switching network (06 Marks)
ii) Satellite communication. (04 Marks)
c. Write short notes on sensors and its types.
- 8 a. Explain the planning terms in distribution systems. (06 Marks)
b. Mention the 4 approaches to the synthesis of optimum line network. (06 Marks)
c. Explain the selection process of optimum size of line conductors and transformers. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42-8 = 50, will be treated as malpractice.