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10EE844



Eighth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Electrical Distribution System

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain the factors affecting distribution planning. (10 Marks)
 b. Explain EDS automation and functions of automation and control. (10 Marks)
- 2 a. Define the following terms :
 i) Demand factor
 ii) Load factor
 iii) Loss factor
 iv) Diversity factor
 v) Utilization factor. (10 Marks)
- b. Derive the relationship between load and loss factor. (06 Marks)
- c. If the overall diversity factor of the substation is 1.35. Determine : i) maximum demand of the station ii) demand factor of each load iii) sum of connected load for the following data :

Load type	Mar demand in kW	Diversity factor	Demand factor
Domestic	1500	1.2	0.8
Commercial	200	1.1	0.8
Industrial	10,000	1.25	1.0

(04 Marks)

- 3 a. Explain different components of the planning process. (06 Marks)
 b. What are planning methods and explain in brief? (08 Marks)
 c. Explain planning criterion and standards of EDS. (06 Marks)
- 4 a. Explain in brief about distributed generation and net metering. (08 Marks)
 b. Write a note on distribution system economics and finance. (06 Marks)
 c. Write short notes on :
 i) GPS(Global Position System)
 ii) Background Maps
 iii) Digital Mapping. (06 Marks)

PART – B

- 5 a. With block diagram, explain the engineering design of distribution system. (08 Marks)
 b. Explain operation criteria and standards. (06 Marks)
 c. Explain distribution substation with different bus schemes. (06 Marks)
- 6 a. Explain voltage control and voltage regulation with respect to electrical distribution system. (08 Marks)
 b. Explain harmonic distortion and effects of harmonics. (08 Marks)
 c. Write short note on Automatic Voltage Booster (AVB). (04 Marks)

- 7 a. Explain the following terms :
- i) Automatic switching control
 - ii) Data concentrator unit
 - iii) Ethernet
 - iv) Human machine interface.
- b. With hardware configuration explain the SCADA system components. (08 Marks)
- c. What is satellite communication and explain the same. (06 Marks)
- 8 a. With graphical representation, discuss the least cost analysis. (06 Marks)
- b. Explain the selection process of optimum size of line conductor and transformer. (08 Marks)
- c. Explain about lines and transformers in network cost modeling. (06 Marks)

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