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10EE844

Eighth Semester B.E. Degree Examination, June/July 2015

Electrical Distribution Systems

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. With the help of block diagram, explain the present distribution system planning technique. **(10 Marks)**

b. What are the factors affecting load forecast? **(06 Marks)**

c. What are distribution system planning models? **(04 Marks)**

2 a. Define the mean of utilization factor, plant factor and load factor. **(06 Marks)**

b. The feeder has a system peak of 3000KVA per phase and a copper loss of 0.5% at the system peak. Determine the following :

i) The copper loss of the feeder in kilowatts per phase.

ii) The total copper losses of the feeder in kilowatts per three phase. **(04 Marks)**

c. Explain the relationship between the load and loss factor. **(10 Marks)**

3 a. Explain the feeder system with circuit diagram in distribution system. **(08 Marks)**

b. Discuss planning process in system planning. **(08 Marks)**

c. What are the benefits of Demand – side planning? **(04 Marks)**

4 a. Explain in detail about dispersed generation and net metering. **(08 Marks)**

b. Discuss in brief the criteria for selecting a substation site in electrical distribution system. **(06 Marks)**

c. Write a note on Global positioning system (GPS). **(06 Marks)**

PART – B

5 a. Explain the engineering design with flow diagram of the design process. **(10 Marks)**

b. Discuss the impact of voltage control on power utility system. **(06 Marks)**

c. Write briefly about the operation criteria in distribution system. **(04 Marks)**

6 a. Draw the schematic diagram of Energy management system scheme and explain the varies means of energy management. **(10 Marks)**

b. Write the effects of Harmonics on power distribution network. **(06 Marks)**

c. Explain in brief the voltage fluctuation in distribution system. **(04 Marks)**

7 a. Explain the following terms:

i) Automation switching control

ii) Information Technology (IT)

iii) Workstation

iv) Remote Terminal unit (RTU) **(08 Marks)**

b. Write a note on sensors of distribution Automation. **(08 Marks)**

c. What are the benefits of Distribution Automation? **(04 Marks)**

8 a. Explain the selection process of optimum size of line conductor and transformers. **(08 Marks)**

b. With graphical representation, discuss the least cost analysis. **(08 Marks)**

c. What are the areas of interest in optimization? **(04 Marks)**

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10EE844

Eighth Semester B.E. Degree Examination, June/July 2014
Electrical Distribution System

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Discuss the factors affecting the distribution planning. **(10 Marks)**

b. What is distribution automation? Explain with illustrative example the distribution automation. **(10 Marks)**

2 a. Explain the following terms:
i) Maximum demand.
ii) Demand factor.
iii) Plant factor.
iv) Loss factor.
v) Load factor. **(10 Marks)**

b. Derive the relationship between the load and loss factors. **(10 Marks)**

3 a. Explain different components of the planning process. **(06 Marks)**

b. Discuss in brief the planning criteria of distribution system. **(06 Marks)**

c. Write a note on distributed generation. **(08 Marks)**

4 a. Give the economic analysis of distribution system. **(06 Marks)**

b. With block diagram representation, explain the process of digital mapping. **(06 Marks)**

c. Write a note on GIS in distribution system. **(08 Marks)**

PART – B

5 a. With the block diagram, explain the design process of distribution system. **(06 Marks)**

b. Discuss the operation criteria and standards. **(08 Marks)**

c. With any one bus scheme, explain distribution substation. **(06 Marks)**

6 a. Discuss the different data for determining the conductor size of the feeder. **(06 Marks)**

b. Discuss the voltage drop calculations in distribution feeder. **(06 Marks)**

c. Mention the system losses. Explain the commercial losses in distribution system. **(08 Marks)**

7 a. Explain the following terms:
i) Human machine interface; ii) Remote terminal units. **(06 Marks)**

b. Discuss the communication system in power distribution. **(06 Marks)**

c. With hardware configuration explain the SCADA system components. **(08 Marks)**

8 a. With graphical representation, discuss the least cost analysis. **(06 Marks)**

b. Explain the cost modeling of lines and transformers. **(06 Marks)**

c. Explain the selection process of optimum size of line conductors and transformers. **(08 Marks)**

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