Code: 15A02701 **R15**

B.Tech IV Year I Semester (R15) Regular Examinations November/December 2018

ELECTRICAL DISTRIBUTION SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is meant by term load? How loads can be classified?
(b) Discuss about loss factor.
(c) Differentiate between radial and loop types of primary distribution feeders.
(d) Draw the neat sketch of ring main distribution system.
(e) What are the advantages and disadvantages of outdoor substation?
(f) Discuss advantages of optimal location of substation.
(g) Discuss the importance of power factor correction.
(h) Discuss the disadvantages of low voltage and low p.f of the system.
(i) Explain automatic meter reading (AMR).
(j) What are the advantages of distribution automation?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Discuss the effect of load factor on the cost of generation in a power system.

OR

3 Discuss the characteristics of different loads.

UNIT – II

4 Explain various factors that influence voltage level in design and operation of the distribution system.

OR

5 Explain how the rating of distribution substation can be calculated by taking a general case with 'n' number of feeders.

UNIT – III

6 Explain the criteria for location of a substation and what are the benefits obtained through optimal location of substation?

OR

7 Discuss about the methodology to fix the rating of a distribution substation.

UNIT – IV

8 A 440 V, 50 cycles three phase line delivers 250 kW at 0.7 p.f (lag). It is desire to bring the line p.f to unity by installing shunt capacitors. Calculate the capacitance if they are: (i) Star connected. (ii) Delta connected.

OR

9 Why do we need the voltage control and power factor correction in power systems? Explain.

UNIT – V

10 What are the requirements for DA communication? State different communication systems used in DA.

OR

11 Explain the advantages of introducing distribution automation.

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