SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Regular & Supplementary Examinations Feb-2021
ELECTRICAL DISTRIBUTION SYSTEMS
(Electrical and Electronics Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 a A generating station has the following daily load cycle :   6M
      Time (Hours) 0—6 6—10 10—12 12—16 16—20 20—24
      Load (MW)   40   50   60   50   70   40
      Draw the load curve and find (i) average load and (ii) load factor.
   b Discuss about Diversity factor and Coincidence factor.   6M

OR

2 a Define and explain the terms feeder, distributor &service mains with diagram. 6M
   b Compare overhead and underground distribution systems?   6M

UNIT-II

3 a A 2 wire DC distributor cable AB is 2 KM long supplies the loads of 100A, 150A, 8M
      200A and 50A situated 500m, 1000m, 1600m and 2000m from the feeding point A.
      Each conductor has a resistance of 0.01ohm per 1000m.Calculate potential difference
      at each load point if potential difference of 300V is maintained at point A.
   b Draw the neat sketch of ring main distributed system? And write its advantages? 4M

OR

4 a Derive the equations for voltage drops in each section and minimum potential in 7M
      radial Feeder with uniformly distributed load fed at unequal voltages at both ends.
   b Explain the AC secondary distribution system with diagram.   5M

UNIT-III

5 a Explain the various factors to be considered to decide ideal location of substation? 6M
   b Explain how to decide the rating of a distribution a substation?   6M

OR

6 a What are the advantages and disadvantages of ungrounded system?   5M
   b What is solid grounding? What are its advantages and disadvantages?   7M

UNIT-IV

7 a Define power factor? Explain voltage and current relationship for different loads. 6M
   b Explain the role of shunt capacitors in power factor correction.   6M

OR

8 a An alternator is supplying a load of 300 kW at a p.f. of 0·6 lagging. If the power 6M
      factor is raised to unity, how many more kilowatts can alternator supply for the same
      kVA loading?
   b Determine the optimum capacitor allocation for improvement of power factor. 6M

UNIT-V

9 a Explain the distribution system Project planning with diagram.   6M
   b What are the communication methods?   6M

OR

10 a Explain about Information technology and LAN.   6M
   b Explain about Automatic Meter reading in distribution automation?   6M

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