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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech IV Year I Semester Regular Examinations February-2022

ELECTRICAL DISTRIBUTION SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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|---|--|----|----|
| 1 | a Define Load factor. | L1 | 2M |
| | b What is a service main in distributed systems? | L2 | 2M |
| | c Explain switching substation. | L1 | 2M |
| | d Discuss the importance of power factor correction. | L1 | 2M |
| | e Define Distribution Automation. | L1 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

- | | | | |
|---|--|----|----|
| 2 | a What is Load curve? What is the importance of load curve? | L1 | 5M |
| | b Explain the AC secondary distribution system with diagram. | L2 | 5M |

OR

- | | | | |
|---|--|----|----|
| 3 | a Compare Overhead and Underground distribution systems. | L2 | 5M |
| | b Explain the AC secondary distribution system with diagram. | L1 | 5M |

UNIT-II

- | | | | |
|---|--|----|----|
| 4 | a Derive an expression for the voltage drop for a uniformly loaded distributor fed at one end. | L3 | 5M |
| | b What are the advantages of AC distribution? | L1 | 5M |

OR

- | | | | |
|---|---|----|----|
| 5 | a Explain the AC secondary distribution system with diagram. | L1 | 5M |
| | b A single-phase distributor 2 kilometers long supplies a load of 120 A at 0.8 p.f. lagging at its far end and a load of 80 A at 0.9 p.f. lagging at its mid-point. Both power factors are referred to the voltage at the far end. The resistance and reactance per km (go and return) are 0.05 Ω and 0.1 Ω respectively. If the voltage at the far end is maintained at 230 V, calculate | L4 | 5M |

(i) Voltage at the sending end (ii) Phase angle between voltages at the two ends.

UNIT-III

- 6 a What is Neutral grounding? What are the advantages of neutral grounding? L1 5M
b What are the disadvantages of ungrounded system? L1 5M

OR

- 7 a What is solid grounding? What are its advantages and disadvantages solid grounding. L1 6M
b What is resistance grounding? What are its advantages and disadvantages? L1 4M

UNIT-IV

- 8 a Define power factor. Explain voltage and current relationship for different loads. L1 6M
b Explain Phase advancers. L1 4M

OR

- 9 a What are the disadvantages of low power factor? L1 5M
b Explain Static capacitors in power factor improvement. L1 5M

UNIT-V

- 10 Explain distribution automation. Give the various functions of distribution automation. L2 10M

OR

- 11 a What are the benefits of distribution automation? L1 5M
b Explain about Information technology and LAN. L1 5M

*****END*****