

**ANURAG Engineering College**

(An Autonomous Institution)

III B.Tech II Semester Supplementary Examinations, Dec-2023/Jan-2024

**ELECTRICAL DISTRIBUTION SYSTEMS**

(ELECTRICAL AND ELECTRONICS ENGINEERING)

**Time: 3 Hours****Max.Marks:75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. What are the various factors that are to be considered in selecting primary feeder rating?	CO1	L1	2M
2. What is the significance of loss factor?	CO1	L1	3M
3. What is the importance of % voltage drop in feeder lines?	CO2	L1	2M
4. Why is voltage drop consideration important in distribution system?	CO2	L1	3M
5. Deduct an expression for voltage drop for three phase system	CO3	L2	2M
6. What is the importance of % power loss in feeder lines?	CO3	L1	3M
7. What are the demerits for low power factor in the distribution system?	CO4	L1	2M
8. What is the need for p.f improvement in distribution systems?	CO4	L1	3M
9. Propose the different methods for voltage control?	CO5	L2	2M
10. What is the need of voltage control in distribution systems?	CO5	L1	3M

**Section B (Essay Questions)****Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

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|---|-----|----|-----|
| 11. A) The load curves of two different categories of load and system peak load are as follows. Find the diversity factor and coincidence factor for the system<br>Maximum load of industrial load = 2000 kW<br>Maximum load of residence load = 2500 kW<br>System maximum load = 3200 kW | CO1 | L3 | 10M |
| <b>OR</b>   |     |    |     |
| B) Develop the relationship between the load factor and loss factor with different cases  | CO1 | L3 | 10M |
| 12. A) Compare the % voltage drop of the feeders with square type service area and hexagonal type service area.   | CO2 | L3 | 10M |
| <b>OR</b>   |     |    |     |
| B) Draw and explain the basic design practice of the secondary distribution substation.   | CO2 | L2 | 10M |
| 13. A) What are the different protective devices used in the distribution? Give comparison between them.  | CO3 | L3 | 10M |
| <b>OR</b>   |     |    |     |
| B) Briefly summarize the general procedure for coordination of protective devices.  | CO3 | L3 | 10M |
| 14. A) Elaborate the residual current circuit breaker with diagram  | CO4 | L3 | 10M |
| <b>OR</b>   |     |    |     |
| B) How does p.f improvement help in reduction in % voltage drop and hence voltage regulation of distribution transformer.   | CO4 | L3 | 10M |

15. A) How an AVB can control voltage? With the aid of suitable diagram explain its function. CO5 L3 10M

**OR**

B) What is series capacitor compensation in feeder lines? How does it improve the regulation of the lines? CO5 L3 10M