



R20 Regulation

Subject code: 3E8BA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VIII Semester Regular Examinations, April 2024

ELECTRICAL DISTRIBUTION SYSTEMS (ELECTRICAL AND ELECTRONICS ENGINEERING) (Professional Elective)

Maximum Marks: 70

Date: 24.04.2024 Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10X2M=20 Marks)

CO

Bloom
Tx

1	What is load factor and diversity factor?	1	L1
2	What are the types of loads.	1	L1
3	List the various factors that are to be considered in selecting sub-station location.	2	L2
4	What are the disadvantages of radial distribution feeders.	2	L1
5	List the main objectives of distribution protection system.	3	L1
6	What is coordination.	3	L1
7	State the effect of shunt capacitors.	4	L1
8	What is the function of Auto-Recloser.	4	L1
9	State the importance of voltage control.	5	L2
10	Expand AVB and AVR.	5	L2

Part-B

Answer All the following questions.

(5X10M=50Marks)

11	A. Explain the following terms: [4M] i) Maximum demand ii) Demand factor iii) Loss factor iv) Utilization factor.	1	L2
	B. A load of 100 kW is connected at the riverside substation. The 15 min. weekly Maximum demand is given by 75 kW and the weekly energy consumption is 4200kWh. Find the demand factor, the 15 min. weekly load factor of the substation and its associate loss factor. [6M]	1	L4
	OR		
12	Illustrate the design of Radial type primary feeder with examples. [10M]	1	L3
13	How to analyze Distribution Substation Service area served by 'n' primary feeders and derive its voltage drop expression. [10M]	2	L3
	OR		
14	Derive an approximate voltage drop equation of primary feeder and give the condition for load power factor at which voltage drop is maximum? [10M]	2	L3

15	Write the types of common faults and illustrate the procedure for fault calculations. [10M]	3	L3
	OR		
16	A. Illustrate the principle of operation of Auto-line sectionalizers. [5M] B. Explain the coordination procedure between fuse and circuit breaker. [5M]	3	L4
17	How do you determine the best capacitor location and explain. 5M [10]	4	L3
	OR		
18	Write the differences between the shunt and series capacitors. [10M]	4	L2
19	Describe different types of equipment for voltage control with neat diagrams. [10M]	5	L3
	OR		
20	What is a line drop compensator? How is it used along with tap changer of transformer for voltage control? [10M]	5	L3