



R17 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 1E7BB

B.Tech IV Year I Semester Regular Examinations, February 2021

ELECTRICAL DISTRIBUTION SYSTEMS

(Professional Elective-IV)

(Electrical and Electronics Engineering)

Maximum Marks: 70

Date: 25.02.2021 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.
 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)

- 1 Define substation.
- 2 Obtain the relation between the load factor and loss factor?
- 3 What are the essential requirements of a good distribution system?
- 4 What is the condition for the selection of optimum size of line conductors and distribution transformers?
- 5 List the causes for overvoltage in distribution system.
- 6 Draw neat sketches radial type and loop type sub transmission systems
- 7 What is the difference between series and shunt compensation
- 8 Define reactive power
- 9 The placement of capacitors on LT side is preferred over HT side - why?
- 10 What is the effect of AVR in voltage control

Part-B

Answer All the following questions.

(10M X 5=50Marks)

- 11 Discuss various types of loads and factors in power system loading. (10M)
OR
- 12 The annual peak load input to a primary feeder is 2000kW. The total copper loss at the time of peak load is 100kW. The total annual energy supplied to the sending end of the feeder is 6.7×10^6 kWh. Then: i. Determine the annual loss factor. (10M)
- 13 Explain Radial and Ring main and interconnected systems?(10M)
OR
- 14 Derive the equations for voltage drop and power loss in a radial feeder with uniformly distributed load fed at one end. (10M)
- 15 Explain the general coordination procedure of fuse to fuse operation and circuit breaker to fuse operation. (10M)
OR
- 16 Explain the detailed design on overhead power lines. (10M)

- 17 Write short notes on system over voltages and protection. (10M)
OR
- 18 Explain the procedure to determine the optimal capacitor location for compensation and voltage control. (10M)
- 19 Explain the various parameters that can be optimized in power distribution system. (10M)
OR
- 20 Explain the difference between series and shunt capacitors in voltage control action. (10M)