



Regulation R20

Subject code: 3E1AD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech I Semester Supplementary Examinations, September 2023

BASIC ELECTRICAL ENGINEERING
(Common to CE & EEE)

Maximum Marks: 70

Date:04.10.2023 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 State Ohm's law with explanation.
- 2 Define Node with example.
- 3 Explain Rectangular form
- 4 Explain pure inductor(L) with ac excitation
- 5 Explain difference between core and shell type transformers?
- 6 List out losses in transformer
- 7 Define motor and write types of motors
- 8 Explain EMF and back EMF of dc machines
- 9 Application of primary batteries and secondary batteries.
- 10 List the types of cables.

Part-B

Answer All the following questions.

(10M X 5=50Marks)

- 11 State and explain Thevenin's theorem for DC excitation with an example. 10M
- OR
- 12 State and explain Reciprocity theorem for DC excitation with an example 10M
- 13 Derive the Voltage, current and of RL SERIES dc circuit factor 10M
- OR
- 14 Define the following terms 10M
i) peak factor ii) Average Value iii) R.M.S value iv) Form Factor
- 15 a) Explain the principle operation of single phase transformer. 5M
b) Write short notes on transformer. 5M
- OR
- 16 Explain the Regulation and efficiency in a Transformer? 10M

- 17 An 8-pole d.c. generator has 500 armature conductors, and a useful flux of 0.05 Wb per pole. What will be the e.m.f. generated if it is lap-connected and wave connected with at 1200 rpm? 10M

OR

- 18 Explain the constructional features of a DC generator with neat diagram. 10M

- 19 a) Explain briefly the concept of wiring system and earthing. 5M
b) Explain the types of wires and cables. 5M

OR

- 20 a) Explain the power factor improvement. 5M
b) Write the applications of MCB. 5M