



R20 Regulation

Subject code: 3E2AN

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Semester Supplementary Examinations, June 2024

BASIC ELECTRICAL ENGINEERING

(Common for CSE,ECE,IT,CSE(AI&ML),CSE(DS))

Maximum Marks: 70

Date:04.07.2024 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.
 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)

Q.NO	QUESTIONS	CO	Blooms Tx
1	State KVL and KCL	CO1	L2
2	State superposition theorem	CO1	L2
3	Define instantaneous value	CO1	L2
4	Define Form factor	CO1	L2
5	Define transformation ratio	CO2	L3
6	Write the conditions for the ideal transformer?	CO2	L3
7	Classify armature windings in DC machine.	CO3	L2
8	Write the Emf equation of a dc generator.	CO3	L3
9	Explain the importance of Earthing.	CO4	L2
10	What are the types of batteries	CO4	L2

Part-B

Answer All the following questions. (10M X 5=50Marks)

11	What are Active and Passive Elements. Explain in detail? (10M)	CO1	L3
OR			
12	Calculate the current (I) flowing through 20 Ω using super position theorem (10M)	CO1	L5
13	Derive the expression for average value, RMS value, Form factor and Peak factor of sinusoidal waveform. (10M)	CO1	L5

	OR		
14	Derive the expression for impedance (Z), phase angle (Θ) and power factor ($\cos\phi$) for RLC series circuit with relevant phasors. (10M)	CO1	L3
15	Explain the OC and SC test of a single-phase transformer with neat diagram (10M)	CO2	L2
	OR		
16	Explain the working of an Auto-Transformer with neat diagram (10M)	CO2	L4
17	Explain Back Emf of DC motor. Derive the torque equation of DC motor? (10M)	CO3	L3
	OR		
18	Give the constructional details and working of three phase induction motors? (10M)	CO3	L3
19	Explain in brief the different types of circuit breakers with neat diagrams? (10M)	CO4	L3
	OR		
20	Explain in detail the types of earthing with neat diagrams? (10M)	CO4	L2