R18 Regulation *Subject code:2E1AD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Supplementary Examinations, June 2026

BASIC ELECTRICAL ENGINEERING

(Common to CE, EEE, ME & IT)

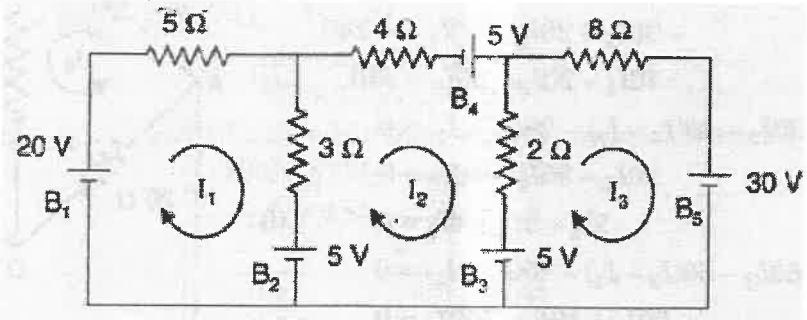
Maximum Marks: 70 Date: 23.06.2026 Duration: 3 hours

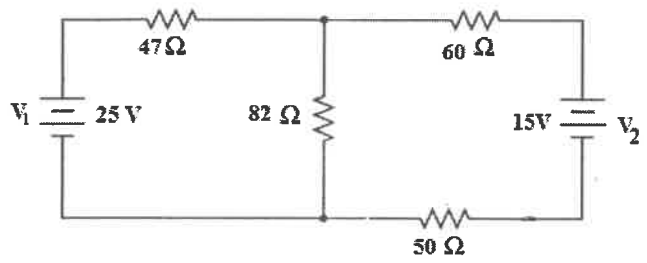
Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Write a short note on different types energy sources.	2M	1	L1
2	Define the lenz's law.	2M	1	L1
3	Define the form factor and peak factor.	2M	2	L1
4	What is mean by phase difference in alternating quantity.	2M	2	L1
5	State the Resiprocity theorem.	2M	3	L1
6	Define Tellegan's theorem.	2M	3	L1
7	List the functions of yoke and armature winding in DC machine.	2M	4	L1
8	Differentiate ideal transformer and practical transformer.	2M	4	L1
9	Mention the importance of earthing and types of earthing.	2M	5	L1
10	List the types of wires and cables.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Determine the mesh currents I_1, I_2 and I_3 by using Mesh current analysis.	5M	1	L2
		5M		
	OR			
12	Explain about the magnetic materials and BH characteristics.	10M	1	L2
13	Explain the parallel RLC circuit with neat circuit diagram and phasor diagram.	10M	2	L2
	OR			
14	a) With neat circuit and phasor diagram explain the series RLC circuit.	10M	2	L2

	b) With neat graph explain the resonance frequency of series RLC circuit and derive expressions for resonance frequency and quality factor.	5M		
15	Using superposition theorem, determine the current flowing through the 82Ω resistor.  	10M	3	L2
	OR			
16	Define and derive the Thevenin's theorem with suitable example.	10M	3	L2
17	a) Derive the EMF equation of DC generator. b) Derive the torque equation of DC motor.	5M 5M	4	L2
	OR			
18	250/120V,5KVA single phase transformer has primary resistance of 0.2Ω, and reactance of 0.75 Ω the secondary resistance is 0.05Ω and reactance of 0.2 Ω a) Determine the regulation while supplying full load on 0.8 leading P.F b) Determine the secondary terminal voltage on full load and 0.8 leading P.F	5M 5M	4	L2
19	a) Explain the concept of earthing. b) Explain the deferent types of wires and cables	5M 5M	5	L2
	OR			
20	Explain any two methods of charging of batteries.	10M	5	L2