



Regulation R18 **Subject code: 2E2AJ**
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
 (Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech II Semester Supplementary Examinations, January 2024
BASIC ELECTRICAL ENGINEERING

(Common to ECE & CSE)

Maximum Marks: 70

Date: 29.01.2024 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)

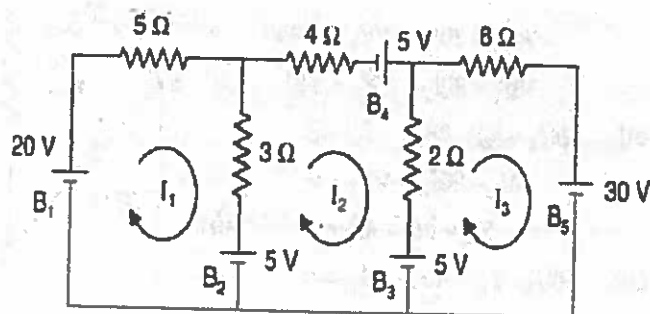
		CO	Bloom Tx
1	State the Kirchoff's voltage law and current law.	CO1	L2
2	State the Faradays law of electromagnetic induction.	CO3	L2
3	Modify the following rectangular quantities into polar. 20+j30 (b) 5-j10	CO1	L3
4	Show the relationship between line values and phase values of voltage and current in star and delta connection.	CO1	L3
5	Draw the Thevenin's equivalent circuit.	CO2	L4
6	State the millman's theorem.	CO2	L4
7	Classify armature windings in DC machine.	CO3	L4
8	Differentiate ideal transformer and practical transformer.	CO3	L2
9	Write the importance of earthing.	CO4	L2
10	Classify the types of wires.	CO4	L4

Part-B

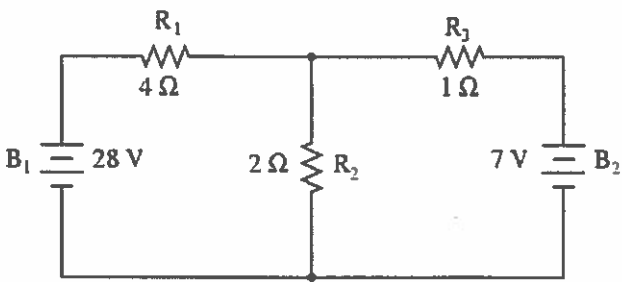
Answer All the following questions.

(5X10M=50Marks)

- 11 Determine the mesh currents I_1 , I_2 and I_3 by using Mesh analysis? Verify the same using Nodal Analysis. Give Reasons, Which Alternative is the Best



OR

12	Derive the expression for self inductance, mutual inductance and coefficient of coupling of magnetic circuit.	10M	CO3	L2
13	Derive the expression for average value, RMS value, Form factor and Peak factor of sinusoidal waveform.	10M	CO1	L2
	OR			
14	Outline the resonance of series RLC circuit and derive expressions for resonance frequency, quality factor and bandwidth.	10M	CO1	L4
15	Measure current through the 2Ω resistor Using Superposition Theorem. 	10M	CO2	L5
	OR			
16	Design Internal Resistance of a 10V Battery, To flow the Maximum Current in a load Resistance of 5 Ohms Connected in series with the Battery.	10M	CO2	L6
17	Explain principle of operation of DC generator with neat sketch. Derive the expression for torque equation of DC motor.	10M	CO3	L4
	OR			
18	Analyze the equivalent circuit of single phase transformer	10M	CO3	L4
19	Summarize the function of circuit breaker and describe about MCB, ELCB and MCCB.	10M	CO4	L5
	OR			
20	Classify the types of batteries and mention the important characteristics of batteries. Recommend type of battery for domestic appliances	10M	CO4	L4