St. Peter's Engineering College (Autonomous)	Dept.	:	ECE/CSE/ CSD/CSC
Dullapally (P), Medchal, Hyderabad – 500100. I - Mid Term Examination – November 2023	Academic Year 2023-24		

Subject Code	:	AS22-02ES01	Subject	:	Basic Electrical Engineering			
Class/Section	:	B. Tech.	Year	:	I	Semester	:	I
Duration	:	120 Min	Max. Marks	:	30	Date:	:	

BLOOMS LEVEL						
Remember	L1	Understand	L2	Apply		L3
Analyze	L4	Evaluate	L5	Create		L6

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PART – A (10x1M = 10M)
Note: Answer all Questions. Each Question carries equal marks.

Q. No		Question (s)	Marks	BL	CO
		UNIT - I			
1	a)	Convert the voltage source into current source using source transformation techniques	1M	L1	C124.1
	b)	Write down the formulae for the energy stored in a inductor.	1M	L1	C124.1
	c)	State Kirchhoff's current law.	1M	L2	C124.1
	d)	State Thevenin's theorem.	1M	L2	C124.1
		UNIT – II			
	e)	Define resonance.	1M	L1	C124.2
	f)	What is the impedance of series RC circuit?	1M	L1	C124.2
	g)	What is the relation between line and phase values for voltage and current in a star connected network.	1M	L1	C124.2
	h)	A 2mH inductor is energized with a 230 V, 50 Hz supply. What is the inductive reactance of the coil.	1M	L1	C124.2
		UNIT – III			
	i)	What are lap and wave windings?	1M	L2	C124.3
	j)	What is function of brushes in dc generator?	1M	L2	C114.3

PART – B (20M)

Q. No		Question (s)	Marks	BL	CO
		UNIT - I			
2	a)	Find the currents passing through each resistor 20 ohms & 30 ohms are connected in parallel and supplied by a source of 10V.	4M	L2	C124.1

	b) Derive equivalent resistance when two resistances are connected in both series and parallel.	4M	L3	C124.1
	OR			
3	State and explain Norton's Theorem by considering suitable example.	8M	L2	C124.1
	UNIT – II			
4	a) Find the impedance of RC circuit with AC excitation	4M	L2	C124.2
	b) Find the impedance of RL circuit with AC excitation	4M	L3	C124.2
	OR			
5	Three similar coils each of resistance $40\,\Omega$ and the inductance 2 H are connected in i) star and ii) delta to the three phase 50 Hz and 440V supply. Calculate the line current and total power absorbed.	8M	L2	C124.2
	UNIT – III			
6	Explain the constructional details of DC generator.	4M	L2	C124.3
	OR			
7	A 4-pole lap wound dc generator has 200 armature conductors and flux per pole is 0.5 weber. The generator runs at 900 rpm. Find the generated emf.	4M	L2	C124.3

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