SR 22

St. Peter's Engineering College (Autonomous) Dullapally (P), Medchal, Hyderabad – 500100. I - Mid Term Examination – November 2023						Dept.	:	ECE/CSE/ CSD/CSC
						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) State Kirchhoff's laws.	1M	L1	C124.1
	b) Classify various sources?	1M	L1	C124.1
	c) Define power and energy	1M	L2	C124.1
	d) Write down the formulas for current division rule.	1M	L2	C124.1
	UNIT – II			
	e) Define capacitive reactance and write down the formula for it.	1M	L1	C124.2
	f) What is the impedance of series RL circuit?	1M	L1	C124.2
	g) What is the relation between resistance, reactance and impedance?	1M	L1	C124.2
	h) What are the formulas for active, reactive and apparent power?	1M	L1	C124.2
	UNIT – III			
	i) State Fleming's right-hand rule.	1M	L2	C124.3
	j) Write down the emf equation of a DC generator	1M	L2	C114.3

PART – B (20M)

Q. No	Question (s)	Marks	BL	CO
	UNIT - I			
2	a) Derive the formulas for voltage division rule when two resistances are connected in series connection.	4M	L2	C124.1
	b) Derive equivalent inductance when two Inductances are connected in both series and parallel.	4M	L3	C124.1

	OR			
3	State and explain Thevenin's Theorem by considering suitable example.	**8M**	**L2**	**C124.1**
	UNIT – II			
4	a) Define cycle, time period, instantaneous value and frequency of an ac quantity.	**4M**	**L2**	**C124.2**
	b) Find the impedance of RC circuit with AC excitation	**4M**	**L3**	**C124.2**
	OR			
5	a) Define the terms Average value, Root mean square value, Peak value, Form factor and Peak factor for a full sine wave.	**4M**	**L2**	**C124.2**
	a) A coil takes a current of 2A at 0.6 lagging power factor from a 220 V, 50 Hz single phase source. If the coil is modeled by a series RL circuit, find the complex power in the coil and the values of R and L.	**4M**	**L3**	**C124.2**
	UNIT – III			
6	Derive the emf equation 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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