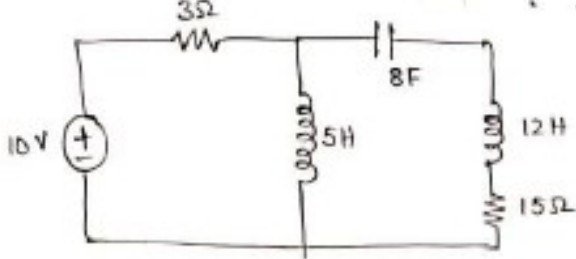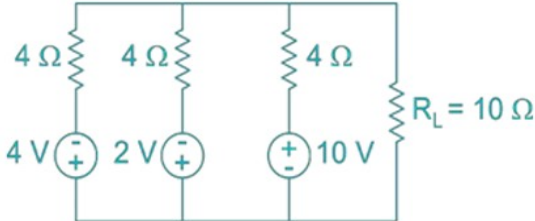Code No: P21EET01

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
II B.TECH I SEMESTER END REGULAR EXAMINATIONS, JAN - 2023
ELECTRICAL CIRCUIT ANALYSIS-II
(EEE BRANCH)

Time: 3 hours   Max. Marks: 70

Answer all the questions from each UNIT (5X14=70M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
1.	a)	Obtain the dual network for the following circuit.	[7M]	1	
	b)	For the incidence matrix shown below, draw the graph.	[7M]	1	
		OR			
2.	a)	What is meant by network matrices and also explain the types of network matrices	[7M]	1	
	b)	Find the value of current through RL using Millman's theorem	[7M]	1	
		UNIT-II			
3.	a)	Two wattmeters connected to a 3-phase motor indicate the total power input to be 12kW. The power factor is 0.6. Determine the readings of each	[6M]	2	
	b)	Three impedances of 100 +j80 ohms each are connected in star across a balanced 400 V, 3-phase, 3-wire supply. Find the line currents taken by the load and the voltage across each impedance. Draw a phasor diagram.	[8M]	2	
		OR			
4.	a)	Derive the relationship between phase and line voltages and currents in delta connected three phase system and also draw the phasor diagram.	[10M]	2	

	b)	Write the advantages of 3-φ circuits over 1-φ circuits.	[4M]	2
		UNIT-III		
5.	a)	What are the initial conditions? Why are they needed? Explain	[7M]	3
	b)	Derive the Transient Response of series RLC-circuit with D.C excitation	[7M]	3
		OR		
6.	a)	Explain about the transient response of series RL circuit to the AC excitation for zero initial conditions	[7M]	3
	b)	Derive the expression for the current in a series RC circuit ($R = 10\Omega$, $C = 5\mu F$) excited by a sinusoidal voltage of 230V, 50 Hz if the supply is connected at t = 0. Assume zero initial conditions.	[7M]	3
		UNIT-IV		
7.	a)	Show that the resonant frequency circuit $f_r^2 = f_1 f_2$ where f_1 and f_2 are the half power frequencies and f_r is the resonant frequency	[7M]	4
	b)	Explain about Series resonance with phasor diagrams	[7M]	4
		OR		
8.	a)	Obtain the expression for resonant frequency, bandwidth and Q-factor for parallel R-L-C circuit.	[7M]	4
	b)	Explain about Parallel resonance with phasor diagrams.	[7M]	4
		UNIT-V		
9.	a)	Express h parameters in terms of ABCD parameters	[7M]	5
	b)	Find the Z- parameters for the following circuit. 	[7M]	5
		OR		
10.	a)	Express Z parameters in terms of ABCD parameters	[7M]	5
	b)	Find the ABCD and h - parameters for the following circuit 	[7M]	5

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