Session - (2021-22)

Name of the faculty - Manasi Priyadarshini.

Session - 2021-22

Discipline - Electronics & Telecommunication

Semester - 3rd

Subject - Circuit Theory

No. of weeks - 15

No. of periods ~~of~~ per week - 4

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Sub: Circuit Theory

Week	Class	Topic
1st 1/11/2021 to 6/11/2021	1st	Circuit elements, Network's introduction
	2nd	Network Synthesize, electric charge,
	3rd	electric current, electrical energy.
	3rd	Potential difference, R-L-C parameter,
	4th	energy source, Active & Passive element
	4th	Current and Voltage source, their
2nd week		transformation and mutual inductance
		(14/11/2021) → Holiday
8/11/2021	1st	Problems on series and parallel resistance
	&	
to	2nd	Star to delta conversion problems and delta to star conversion.
13/11/2021	3rd	KVL and KCL, Mesh analyses and Loop analyses.
	4th	Current direction rule, voltage direction rule, KVL, KCL, numerical problems.
3rd week	1st	Superposition theorem's statement and proof, problems related to Superposition
15/11/2021	2nd	Problems related to Superposition theorem.
to	3rd	Thevenin theorem and problem.
20/11/2021	4th	Holiday ~~Steps for solving Thevenin's theorem and problems of Thevenin's theorem~~
4th week	1st	Steps for solving Thevenin's theorem and problems of Thevenin's theorem
22/11/2021	2nd	Norton's theorem and problems.
to	3rd	Maximum power transfer and problems
27/11/2021	4th	Reciprocity theorem and Millman's theorem (Statement and proof)

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Week	Class	Topic
5th week	1st	Problems
		Chapter-3
29/11/2021	2nd	Frequency, cycle, time period, Amplitude, Average value, RMS ~~factor~~ value, form factor.
to	3rd	Behaviour of AC through pure resistor, inductor, capacitor.
4/12/2021	4th	Behaviour of R-L and RC series ckt and phasor diagram.
6th week		
6/12/2021	1st	Behaviour of RLC series circuit. Its phasor diagram. Voltage triangle
	2nd	Numerical problems.
to	3rd	Behaviour of RL, RC parallel circuit.
11/12/2021	4th	Behaviour of RLC parallel ckt and numerical problems.
7th week		
13/12/2021	1st	Resonance, conditions of resonance frequency of resonance.
	2nd	Impedance, current, voltage, Q-factor and power factor of series resonance
to	3rd	Bandwidth in terms of Q, parallel resonance.
18/12/2021	4th	Derivation of parallel resonance of RL, RC, RLC.
8th week		
20/12/2021	1st	Comparision of series and parallel resonance
to	2nd	Network equations and initial conditions for R, L, C
25/12/2021	3rd	Transient analysis.
	4th	Time constant of RL, RC and RLC ckt

(25/12/2021) → (Holiday)

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Week	Class	Topic
9th week		
29/12/2021	1st	Laplace transform.
to	2nd	Derive equation for RL, RC ckt. (for step response).
1/1/2022	3rd	Problems.
	4th	Derive the eqn for RC & RLC ckt. of impulse response.
10th week	1st	Network function for one port and two port.
3/1/2022	2nd	Open circuit parameters and its numerical problems.
to	3rd	h-parameters.
8/1/2022 (After 11th extension)	4th	T-network and Pie network.
11th week	1st	Ideal and Practical filters and its applications.
10/1/2022	2nd	Cut-off frequency, passband and stop band.
to	3rd	Low pass, High pass, bandpass and bandstop filters.
15/1/2022	4th	Holiday
12th week	1st	Butterworth filter design.
17/1/2022	2nd	Attenuation and gain, bel, Decibel and nepor and their relations.
to	3rd	Attenuators and its applications (T-type and P-type attenuators)
22/1/2022	4th	Chapter-1 Question discussion.

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Week	Class	Topic
13th week 24/1/2022 to 29/1/2022	1st	Chapter - 2 Question discussion
	2nd	Chapter - 3 Question discussion
	3rd	Chapter - 4 Question discussion
	4th	Chapter - 5 Question discussion
14th week 31/1/2022 to 5/2/2022	1st	Chapter - 6 Question discussion
	2nd	Chapter - 7 Question discussion
	3rd	Previous year Question discussion
	4th	Previous year Question discussion
15th week 7/2/2022 to 12/1/2022	1st	Previous year Question discussion
	2nd	Previous year Question discussion
	3rd	~~VST~~ Important Question problems discussion
	4th	VST.

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