

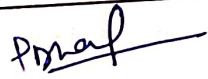
Lesson Plan

Discipline: ETC		Semester-3rd Winter2023	NAME OF THE FACULTY: Priyanka Dhal (PTGF, ETC)
Sl. No.	Subject-Th.2. (CIRCUIT THEORY)	No. Of Days/Week class allotted: 04	Semester From date: 01.08.2023 To date: 30.11.2023 No of weeks: 17
Weeks/Months		Class Day	Topic
1	1st week Aug to 5th week Aug	1st	Unit-1: CIRCUIT ELEMENTS & ENERGY SOURCES.
		2nd	1.1 Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesize.
		3rd	1.2 Voltage Division & Current Division, Energy Sources
		4th	1.3 Electric charge, electric current, Electrical energy, Electrical potential, R-L-C parameters, Active & Passive Elements.
2	2nd week 7th Aug to 12th Aug	1st	1.4 Energy Sources, Current and voltage sources and their transformation & mutual inductance.
		2nd	1.5 Star – Delta transformation.
		3rd	Unit-2: NETWORK THEOREMS
		4th	2.1 Nodal & Mesh Analysis of Electrical Circuits with simple problem.
3	3rd Week 14th Aug to 19th Aug	1st	2.2 Thevenin's Theorem, Norton's Theorem, Maximum Power transfer Theorem, Superposition Theorem, Millman Theorem, Reciprocity Theorem-Statement, Explanation & applications.
		2nd	2.3 Solve numerical problems of above.
		3rd	Unit-3: Power Relation in AC circuits & Transient Response of passive circuits.
		4th	3.1 Definition of frequency, Cycle, Time period, Amplitude, Average value, RMS value, Instantaneous power & Form factor, Apparent power, Reactive power, power Triangle of AC Wave.
4	4th week 21th Aug to 26th Aug	1st	3.2 Phasor representation of alternating quantities
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		3rd	3.3 Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor.
		4th	3.4 DC Transients-Behaviors of R-L, R-C, R-L-C series circuit & draw the phasor diagram and voltage triangle .

5	5th week 28th Aug to 2nd Sept	1st	3.5 Define Time Constant of the above Circuit.
		2nd	3.6 Solve numerical simple problems of above Circuit.
		3rd	Unit-4: RESONANCE AND COUPLED CIRCUITS.
		4th	4.1 Introduction to resonance circuits & Resonance tuned circuit,.
6	1st week 4th Sept to 9th sept	1st	4.2 Series & Parallel resonance
		3rd	4.3 Expression for series resonance, Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth in term of Q..
		3rd	4.3 Expression for series resonance, Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth in term of Q.
		4th	4.4 Parallel Resonance (RL, RC & RLC) & derive the expression.
7	2nd week 11th sept to 16th sept.	1st	4.5 Comparisons of Series & Parallel resonance & applications
		2nd	4.6 simple problems of above Circuit.
		3rd	Unit-5: LAPLACE TRANSFORM AND ITS APPLICATIONS.
		4th	5.1 Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L, R-C & R-L-C.
8	3rd week 18th sept. to 23rd sept	1st	5.2 Analysis and derive the equations for circuit parameters of Impulse response of R-L, R C, R.
		2nd	5.2 Analysis and derive the equations for circuit parameters of Impulse response of R-L, R C, R.
		3rd	5.2 Analysis and derive the equations for circuit parameters of Impulse response of R-L, R C, R.
		4th	Unit-6: Two Port Network Analysis.
9	4th week 25th Sept to 30th sept	1st	6.1 Network elements, ports in Network (One port, two port),
		2nd	6.1 Network elements, ports in Network (One port, two port),
		3rd	6.1 Network elements, ports in Network (One port, two port),
		4th	6.2 Network Configurations (T & pie).
		1st	6.2 Network Configurations (T & pie).
		2nd	6.3 Open circuit (Z-Parameter) & Short Circuit (Y-Parameter) Parameters- Calculate open & short Circuit Parameters for Simple Circuits & its conversion

10	1st week 02nd oct. to 07th oct	3rd	6.3 Open circuit (Z-Parameter)& Short Circuit(Y-Parameter) Parameters- Calculate open & short Circuit Parameters for Simple Circuits & its conversion
		4th	6.3 Open circuit (Z-Parameter)& Short Circuit(Y-Parameter) Parameters- Calculate open & short Circuit Parameters for Simple Circuits & its conversion
11	2nd week 9th oct. to 14th oct	1st	6.4 h- parameter (hybrid parameter) Representation
		2nd	6.4 h- parameter (hybrid parameter) Representation
		3rd	6.4 h- parameter (hybrid parameter) Representation
		4th	.6.5 Define T-Network & pie – Network
12	3rd week 16th oct to 20th oct.	1st	6.5 Define T-Network & pie – Network
		2nd	6.5 Define T-Network & pie – Network
		3rd	Unit-7: FILTERS& ATTENUATORS.
		4th	7.1 Ideal &Practical filters and its applications, cut off frequency, passband and stop band.
13	1st week 30th oct. to 04th Nov	1st	7.1 Ideal &Practical filters and its applications, cut off frequency, passband and stop band.
		2nd	7.1 Ideal &Practical filters and its applications, cut off frequency, passband and stop band.
		3rd	7.2 Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics.
		4th	7.2 Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics.
14	2nd week 6th Nov to 11th Nov	1st	7.2 Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics.
		2nd	7.3 Butterworth Filter Design
		3rd	7.3 Butterworth Filter Design
		4th	7.4 Attenuation and Gain, Bel , Decibel & neper and their relations
15	3rd week 13th Nov to 18th Nov	1st	7.4 Attenuation and Gain, Bel , Decibel & neper and their relations
		2nd	7.4 Attenuation and Gain, Bel , Decibel & neper and their relations
		3rd	7.5 Attenuators& its applications. Classification-T- Type & PI – Type attenuators
		4th	7.5 Attenuators& its applications. Classification-T- Type & PI – Type attenuators
	4th week 20th Nov to 25th	1st	7.5 Attenuators& its applications. Classification-T- Type & PI – Type attenuators
		2nd	2.3 Solve numerical problems of above.

16	Nov	3rd	3.5 Define Time Constant of the above Circuit 3.6 Solve numerical simple problems of above Circuit
		4th	3.5 Define Time Constant of the above Circuit 3.6 Solve numerical simple problems of above Circuit
17	5th week 27th Nov to 30th Nov	1st	7.5 Attenuators & its applications. Classification-T- Type & PI – Type attenuators
		2nd	2.3 Solve numerical problems of above.
		3rd	2.3 Solve numerical problems of above.
		4th	2.3 Solve numerical problems of above.


Signature of the Teacher