ACADEMIC LESSON PLAN OF WINTER 2021

Discipline: ELECTRONICS	Semester: 3rd sem	Name of the Teaching Faculty: Sigma Ray
Subject: Circuit Theory	No. of days/per week class allotted:4p/week	Semester From: 1st Oct 2021 to 8th Jan 2022 No. of weeks:14 weeks
Week	Class Day	Theory Topics
1st	1st	1.1 Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesize.
	2nd	1.2 Voltage Division & Current Division, Energy Sources (Conti…)
	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.
2nd	1st	1.4 Energy Sources, Current and voltage sources and their transformation & mutual inductance
	2nd	1.5 Star – Delta transformation
	3rd	2.1 Nodal & Mesh Analysis of Electrical Circuits (Conti…)
	4th	2.1 Nodal & Mesh Analysis of Electrical Circuits with simple problem.
3rd	1st	2.2.1 Thevenin's Theorem Statement, Explanation (Conti..)
	2nd	2.2.1 Thevenin's Theorem problem solved
	3rd	2.2.2 Norton's Theorem Statement, Explanation (Conti…)
	4th	2.2.2 Norton's Theorem problems solved
4th	1st	2.2.3 Maximum Power transfer Theorem Statement, Explanation and simple problems
	2nd	2.2.4 Superposition Theorem Statement, Explanation (Conti…)
	3rd	2.2.4 Superposition Theorem with simple problems
	4th	2.2.5 Millman Theorem Statement, Explanation with problems
5th	1st	2.2.6 Reciprocity Theorem -Statement, Explanation & simple problems
	2nd	2.3 Solve numerical problems of above.
	3rd	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.(Conti….)
	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. (Conti….)
6th	1st	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.
	2nd	3.2 Phasor representation of alternating quantities
	3rd	3.3 Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor. (Conti….)
	4th	3.3 Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor.
7th	1st	3.4 DC Transients-Behaviors of R-L, R-C, R-L-C series circuit & draw the phasor diagram and voltage triangle. (Conti….)
	2nd	3.4 DC Transients-Behaviors of R-L, R-C, R-L-C series circuit & draw the phasor diagram and voltage triangle
	3rd	3.5 Define Time Constant of the above Circuit
	4th	3.6 Solve numerical simple problems of above Circuit. (Conti….)
8th	1st	3.6 Solve numerical simple problems of above Circuit.
	2nd	4.1 Introduction to resonance circuits & Resonance tuned circuit (Conti….)

	3rd	4.1 Introduction to resonance circuits & Resonance tuned circuit.
	4th	4.2 Series& Parallel resonance
9th	1st	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. (Conti….)
	2nd	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. (Conti….)
	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 (Conti….)
10th	1st	4.4 Parallel Resonance (RL, RC&RLC)& derive the expressions
	2nd	4.5 Comparisons of Series & Parallel resonance& applications (Conti….)
	3rd	4.5 Comparisons of Series & Parallel resonance& applications 4.6 simple problems of above Circuit
	4th	5.1 Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L, R-C &R-L-C (Conti….)
11th	1st	5.1 Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L, R-C &R-L-C
	2nd	5.2 Analysis and derive the equations for circuit parameters of Impulse response of R-L, RC, R-L-C (Conti….)
	3rd	5.2 Analysis and derive the equations for circuit parameters of Impulse response of R-L, RC, R-L-C
	4th	Problems solve for Laplace transformation (Conti…)
12th	1st	Problems solve for Laplace transformation
	2nd	6.1 Network elements, ports in Network (One port, two port)
	3rd	6.2 Network Configurations (T & pie).
	4th	6.3 Open circuit (Z-Parameter)& Short Circuit(Y-Parameter) Parameters- Calculate open & short Circuit Parameters for Simple Circuits & its conversion (Conti…)
13th	1st	6.4 h- parameter (hybrid parameter) Representation
	2nd	6.5 Define T-Network & pie – Network
	3rd	Problems solve for above two port network configuration
	4th	7.1 Ideal &Practical filters and its applications, cut off frequency, passband and stop band.
14th	1st	7.2 Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics. (Conti…)
	2nd	7.3 Butterworth Filter Design
	3rd	7.4 Attenuation and Gain, Bel , Decibel & neper and their relations.
	4th	7.5 Attenuators& its applications. Classification-T- Type & PI – Type attenuators

Signature of Teaching Faculty