

LESSON PLAN

Discipline: E& T.C Engg.	Semester: Third (3 rd)	Name of the Faculty: SUBRAT KUMAR KABI
Subject: Circuit Theory.	No. of days/week class allotted: Five (5)	Semester from Date: 15.09.22 to Date: 21.01.2023 No. of Weeks: 15
WEEK	CLASS DAY	THEORY TOPICS
1 st	1 st	Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesise
	2 nd	Voltage Division & Current Division, Energy Sources
	3 rd	Electric charge, electric current, Electrical energy, Electrical potential
	4 th	RLC parameters, Active & Passive Elements.
	5 th	Energy Sources, Current and voltage sources and their transformation, & Mutual Inductance
2 nd	1 st	Star – Delta transformation
	2 nd	Review Class
	3 rd	Nodal Analysis of Electrical Circuits with simple problem
	4 th	Mesh Analysis of Electrical Circuits with simple problem
	5 th	Thevenin's Theorem
3 rd	1 st	Norton's Theorem
	2 nd	Maximum Power transfer Theorem
	3 rd	Superposition Theorem
	4 th	Millman Theorem
	5 th	Reciprocity Theorem-Statement,
4 th	1 st	Explanation & applications
	2 nd	Solve numerical problems of above
	3 rd	Solve numerical problems of above

	4 th	Solve numerical problems of above
	5 th	Mothly Test
5 th	1 st	Solve numerical problems of above
	2 nd	Review Class
	3 rd	Definition of frequency, Cycle, Time period, Amplitude, Average value, RMS value, Instantaneous power & Form factor
	4 th	Reactive power, power Triangle of AC Wave
	5 th	Phasor representation of alternating quantities
6 th	1 st	Single phase Ac circuits-Behaviors of A.C. through pure Resistor, Inductor & Capacitor
	2 nd	DC Transients-Behaviors of RL series circuit & draw the phasor diagram and voltage triangle
	3 rd	DC Transients-Behaviors of R-C series circuit & draw the phasor diagram and voltage triangle
	4 th	DC Transients-Behaviors of R-L-C series circuit & draw the phasor diagram and voltage triangle.
	5 th	Define Time Constant of the above Circuit
7 th	1 st	Solve numerical simple problems of above Circuit
	2 nd	Solve numerical simple problems of above Circuit
	3 rd	Solve numerical simple problems of above Circuit
	4 th	Mothly Test
	5 th	Solve numerical simple problems of above Circuit
8 th	1 st	Review Class
	2 nd	Introduction to resonance circuits & Resonance tuned circuit,
	3 rd	Series& Parallel resonance
	4 th	Expression for series resonance, Condition for Resonance, Frequency of Resonance,
	5 th	Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth in term of Q.
	1 st	Parallel Resonance (RL&RC)& derive the expression
	2 nd	Parallel Resonance RLC& derive the expression

9 th	3 rd	Comparisons of Series & Parallel resonance & applications
	4 th	simple problems of above Circuit
	5 th	simple problems of above Circuit
10 th	1 st	simple problems of above Circuit
	2 nd	Review Class
	3 rd	Introductions of Laplace Transformation
	4 th	Analysis and derive the equations for circuit parameters of Step response of R-L ckt
	5 th	Monthly Test
11 th	1 st	Analysis and derive the equations for circuit parameters of Step response of R-C ckt
	2 nd	Analysis and derive the equations for circuit parameters of Step response of R-L-C ckt
	3 rd	Analysis and derive the equations for circuit parameters of Impulse response of R-L ckt
	4 th	Analysis and derive the equations for circuit parameters of Impulse response of R-C ckt
	5 th	Analysis and derive the equations for circuit parameters of Impulse response of R-L-C ckt
12 th	1 st	Analysis and derive the equations for circuit parameters of Impulse response of R-L-C ckt (Cont..)
	2 nd	Review Class
	3 rd	Network elements, ports in Network (One port, two port),
	4 th	Network Configurations (T & pie)
	5 th	Open circuit (Z-Parameter) & Short Circuit (Y-Parameter) Parameters- Calculate open & short Circuit Parameters for Simple Circuits & its conversion
	1 st	h- parameter (hybrid parameter) Representation
	2 nd	Define T-Network & pie – Network

13 th	3 rd	Numerical problem
	4 th	Review Class
	5 th	Ideal & Practical filters and its applications, cut off frequency, passband and stop band.
14 th	1 st	Classify filters- low pass, high pass filters & study their Characteristics.
	2 nd	band pass, band stop filters & study their Characteristics.
	3 rd	Butterworth Filter Design
	4 th	Attenuation and Gain, Bel , Decibel & neper and their relations
	5 th	Mothly test
15 th	1 st	Attenuators & its applications. Classification-T- Type attenuators
	2 nd	Classification PI – Type attenuators
	3 rd	Review Class
	4 th	Revision class
	5 th	Revision class