BHUBANANDA ORISSA SCHOOL OF ENGINEERING

LESSON PLAN

BY: PRADEEP KUMAR DHAL SAMANT

SUBJECT: CIRCUIT THEORY

SEMESTER: 3RD

BRANCH: E&TC

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Lesson Plan

Discipline: ETC	Semester: 3rd	Name of the Teaching Faculty: PRADEEP KUMAR DHAL SAMANT
Subject: CIRCUIT THEORY (TH2)	No of Days/per week class allotted:4	Semester from 15.09 2022 to 22.12.2022 No of weeks:14
Week No.	Class Day(Mon, Tues, Wednes & Friday)	Theory Topics
1st	16-09-2022	**Chapter-1- CIRCUIT ELEMENTS& ENERGY SOURCES** **1.1** Circuit elements (Resistance, Inductance, Capacitance), Scope of network analysis & synthesize.
2nd	19-09-2022	**1.2** Voltage Division & Current Division, Energy Sources (Kirchoff's Current Law and Kirchoff's Voltage Law) related Problems.
	20-09-2022	Solve numerical problems of above.
	21-09-2022	**1.3** Electric charge, Electric current, Electrical energy, Electrical potential, R-L-C parameters, Active& Passive Elements.
	23-09-2022	**1.4** Energy Sources, Current and voltage sources and their transformation & mutual inductance.
3rd	26-09-2022	**1.5** Star – Delta transformation Solve numerical problems of above
	27-09-2022	**Chapter-2 NETWORK THEOREMS (Applications in dc circuits)** **2.1** Nodal & Mesh Analysis of Electrical Circuits with simple problems.
	28-09-2022	Solve numerical problems of above.
	30-09-2022	**2.2** Superposition Theorem – Statement, explanation & applications. Solve numerical problems.
4th	10-10-2022	Solve numerical problems of above.
	11-10-2022	Thevenin's Theorem – Statement, explanation & applications. Solve numerical problems.
	12-10-2022	Solve numerical problems of above.
	14-10-2022	Norton's Theorem – Statement, explanation & applications. Solve numerical problems.
5th	17-10-2022	Solve numerical problems of above.

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	18-10-2022	Maximum Power transfer Theorem – Statement, explanation & applications. Solve numerical problems.
	19-10-2022	Solve numerical problems of above.
	21-10-2022	Millman's Theorem – Statement, explanation & applications. Solve numerical problems.
6th	25-10-2022	Reciprocity Theorem - Statement, explanation & applications. Solve numerical problems.
	26-10-2022	**CLASS TEST I**
	28-10-2022	**Chapter-3 Power Relation in AC circuits & Transient Response of passive circuits** **3.1** Definition of frequency, Cycle, Time period, Amplitude, Average value, RMS value, Instantaneous power.
7th	31-10-2022	Peak factor & Form factor, Apparent power, Active power, Reactive power, power Triangle of AC Wave
	01-11-2022	**3.2** Phasor representation of alternating quantities
	02-11-2022	**3.3** Single phase AC circuits-Behaviours of A.C. through pure Resistor, Inductor & Capacitor.
	04-11-2022	**3.4** DC Transients- Behaviours of R-L series circuit & draw the phasor diagram and voltage triangle. Behaviours of R-C series circuit & draw the phasor diagram and voltage triangle.
8th	07-11-2022	**3.4** DC Transients-Behaviours of R-L-C series circuit & draw the phasor diagram and voltage triangle.
	09-11-2022	**3.5** Define Time Constant of the above Circuit.
	11-11-2022	**3.6** Solve numerical simple problems of above Circuit.
9th	14-11-2022	**Chapter-4 RESONANCE AND COUPLED CIRCUITS** **4.1** Introduction to resonance circuits & Resonance tuned circuit. **4.2** Series and Parallel resonance
	15-11-2022	**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 terms of Q.
	16-11-2022	**4.4** Parallel Resonance (RL, RC& RLC)& derive the expression

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	18-11-2022	**1st Internal Assessment**
10th	21-11-2022	**4.5** Comparisons of Series & Parallel resonance& applications.
	22-11-2022	**4.6** Simple problems of above Circuit
	23-11-2022	**Chapter-5 LAPLACE TRANSFORM AND ITS APPLICATIONS**
	25-11-2022	**5.1** Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L& R-C circuit.
11th	28-11-2022	Laplace Transformation, Analysis and derive the equations for circuit parameters of Step response of R-L-C circuit.
	29-11-2022	**5.2** Analysis and derive the equations for circuit parameters of Impulse response of R-L&R-C circuit.
	30-11-2022	Analysis and derive the equations for circuit parameters of Impulse response of R-L-C circuit.
	02-12-2022	**CLASS TEST II**
12th	05-12-2022	**Chapter-6 Two Port Network Analysis.** **6.1** Network elements, ports in Network (One port, two port),
	06-12-2022	**6.2** Network Configurations (T & pie). **6.5** Define T-Network & pie – Network.
	07-12-2022	**6.3** Open circuit (Z-Parameter)& Short Circuit(Y-Parameter) Parameters.
	09-12-2022	Calculate open & short Circuit Parameters for Simple Circuits & its conversion.
13th	12-12-2022	**6.4** h- parameter (hybrid parameter) Representation.
	13-12-2022	**Chapter-7 FILTERS & ATTENUATORS** **7.1** Ideal &Practical filters and its applications, cut off frequency, passband and stop band.
	14-12-2022	**7.2** Classify filters- low pass, high pass, band pass, band stop filters & study their Characteristics.
	16-12-2022	**7.3** Butterworth Filter Design
14th	19-12-2022	**7.4** Attenuation and Gain, Bel, Decibel & Neper and their relations.

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	20-12-2022	**7.5** Attenuators& its applications. Classification-T- Type & PI – Type attenuators.
	21-12-2022	**2nd Internal Assessment** **IMPORTANT QUESTION DISCUSSION.**
		REVISION

13/09/2022
Signature of Faculty

13/09/2022
HOD(E&TC)
Sr. Lecturer
Electronics & Telecomm. Engg.
BOSE, Cuttack

13/9
Principal