

**LESSON PLAN**

<b>DISCIPLINE:</b> Electronics and Telecommunication Engineering	<b>SEMESTER : 3RD</b>	<b>NAME OF THE TEACHING FACULTY:</b> Er. Prabin Kumar Sahoo
<b>SUBJECT:</b> Th.2 - CIRCUIT THEORY	<b>NO.OF DAYS/PER WEEK</b> <b>CLASS ALLOTTED : 4</b>	<b>SEMESTER FROM DATE: 15/09/2022 TO DATE: 22/12/2022</b> <b>NO.OF WEEKS:15</b>
<b>WEEK</b>	<b>CLASS DAY</b>	<b>THEORY</b>
1ST	1ST	CIRCUIT ELEMENTS (RESISTANCE, INDUCTANCE, CAPACITANCE), SCOPE OF NETWORK ANALYSIS & SYNTHESIZE
	2ND	VOLTAGE DIVISION & CURRENT DIVISION, ENERGY SOURCES
	3RD	ELECTRIC CHARGE, ELECTRIC CURRENT, ELECTRICAL ENERGY, ELECTRICAL POTENTIAL,.
	4TH	R-L-C PARAMETERS, ACTIVE& PASSIVE ELEMENTS
2ND	1ST	ENERGY SOURCES, CURRENT AND VOLTAGE SOURCES AND THEIR TRANSFORMATION & MUTUAL INDUCTANCE
	2ND	STAR – DELTA TRANSFORMATION
	3RD	NODAL ANALYSIS OF ELECTRICAL CIRCUITS WITH SIMPLE PROBLEM
	4TH	MESH ANALYSIS OF ELECTRICAL CIRCUITS WITH SIMPLE PROBLEM
3RD	1ST	THEVENIN’S THEOREM
	2ND	THEVENIN’S THEOREM PROBLEMS
	3RD	NORTON’S THEOREM
	4TH	NORTON’S THEOREM PROBLEMS
4TH	1ST	MAXIMUM POWER TRANSFER THEOREM
	2ND	MAXIMUM POWER TRANSFER THEOREM PROBLEMS
	3RD	SUPERPOSITION THEOREM
	4TH	SUPERPOSITION THEOREM PROBLEMS
5TH	1ST	MILMANS THEOREM
	2ND	RECIPROCITY THEOREM
	3RD	DEFINITION OF FREQUENCY, CYCLE, TIME PERIOD, AMPLITUDE, AVERAGE VALUE, RMS VALUE
	4TH	INSTANTANEOUS POWER & FORM FACTOR, APPARENT POWER, REACTIVE POWER, POWER TRIANGLE OF AC WAVE.
6TH	1ST	INSTANTANEOUS POWER & FORM FACTOR, APPARENT POWER, REACTIVE POWER, POWER TRIANGLE OF AC WAVE.
	2ND	PHASOR REPRESENTATION OF ALTERNATING QUANTITIES
	3RD	SINGLE PHASE AC CIRCUITS-BEHAVIORS OF A.C. THROUGH PURE RESISTOR, INDUCTOR & CAPACITOR.
	4TH	SINGLE PHASE AC CIRCUITS-BEHAVIORS OF A.C. THROUGH PURE RESISTOR, INDUCTOR & CAPACITOR.
7TH	1ST	DC TRANSIENTS-BEHAVIORS OF R-L, R-C, R-L-C SERIES CIRCUIT & DRAW THE PHASOR DIAGRAM AND VOLTAGE TRIANGLE
	2ND	DC TRANSIENTS-BEHAVIORS OF R-L, R-C, R-L-C SERIES CIRCUIT & DRAW THE PHASOR DIAGRAM AND VOLTAGE TRIANGLE
	3RD	TIME CONSTANT OF R-L,R-C,R-L-C CIRCUITS
	4TH	NUMERICAL PROBLEMS
8TH	1ST	NUMERICAL PROBLEMS
	2ND	NUMERICAL PROBLEMS
	3RD	INTRODUCTION TO RESONANCE CIRCUITS
	4TH	RESONANT TUNED CIRCUITS

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9TH	1ST	SERIES & PARALLEL RESONANCE
	2ND	EXPRESSION FOR SERIES RESONANCE, CONDITION FOR RESONANCE, FREQUENCY OF RESONANCE
	3RD	IMPEDANCE, CURRENT, VOLTAGE, POWER, Q FACTOR AND POWER FACTOR OF RESONANCE BANDWIDTH INTERMS OF Q
	4 <sup>TH</sup>	IMPEDANCE, CURRENT, VOLTAGE, POWER, Q FACTOR AND POWER FACTOR OF RESONANCE BANDWIDTH INTERMS OF Q
10TH	1ST	PARALLEL RESONANCE (RL, RC & RLC) & DERIVE THE EXPRESSION
	2ND	COMPARISONS OF SERIES & PARALLEL RESONANCE & APPLICATIONS
	3RD	PROBLEMS ON RESONANCE CIRCUITS
	4TH	PROBLEMS ON RESONANCE CIRCUIT
11TH	1ST	LAPLACE TRANSFORMATION
	2ND	LAPLACE TRANSFORMATION
	3RD	LAPLACE TRANSFORMATION
	4TH	ANALYSIS AND DERIVATION THE EQUATIONS FOR CIRCUIT PARAMETERS OF STEP RESPONSE OF R-L CIRCUIT
12TH	1ST	ANALYSIS AND DERIVATION THE EQUATIONS FOR CIRCUIT PARAMETERS OF STEP RESPONSE OF R-C CIRCUIT
	2ND	ANALYSIS AND DERIVATION OF THE EQUATIONS FOR CIRCUIT PARAMETERS OF STEP RESPONSE OF R-L-C CIRCUIT
	3RD	ANALYSIS AND DERIVATION OF THE EQUATIONS FOR CIRCUIT PARAMETERS OF IMPULSE RESPONSE OF R-L, RC CIRCUIT
	4TH	ANALYSIS AND DERIVE THE EQUATIONS FOR CIRCUIT PARAMETERS OF IMPULSE RESPONSE OF R-L, RC, R-L-C
13TH	1ST	NETWORK ELEMENTS, PORTS IN NETWORK (ONE PORT, TWO PORT),
	2ND	T AND PIE NETWORK
	3RD	Z-PARAMETERS AND Y-PARAMETERS
	4TH	H-PARAMETER
14TH	1ST	PROBLEMS ON TWO PORT NETWORK
	2ND	IDEAL & PRACTICAL FILTERS
	3RD	CUT OFF FREQUENCY, PASSBAND AND STOP BAND OF FILTERS
	4TH	- LOW PASS, HIGH PASS FILTERS AND THEIR CHARACTERISTICS
15TH	1ST	BAND PASS, BAND STOP FILTERS & THEIR CHARACTERISTICS
	2ND	BUTTERWORTH FILTER DESIGN
	3RD	ATTENUATION AND GAIN, BEL, DECIBEL & NEPER AND THEIR RELATIONS.
	4TH	ATTENUATORS & ITS APPLICATIONS. CLASSIFICATION-T-TYPE & PI-TYPE ATTENUATORS