

ORISSA SCHOOL OF ENGINEERING & POLYTECHNIC
DEPARTMENT OF ELECTRICAL ENGINEERING
LESSON PLAN

SUBJECT- CIRCUIT THEORY(TH-2)
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UNIT	DATE	PERIOD	TOPIC TO BE COVERED
1			CIRCUIT ELEMENTS AND ENERGY SOURCES
	01/09/2023	1	INTRODUCTION TO CIRCUIT ELEMENTS(RESISTANCE, INDUCTANCE, CAPACITANCE), AND ENERGY SOURCE
	02/09/2023	2	ACTIVE, PASSIVE, UNILATERAL & BILATERAL, LINEAR & NON-LINEAR ELEMENTS
	04/09/2023	3	CONCEPT OF VOLTAGE DIVISION AND CURRENT DIVISION
	07/09/2023	4	CONCEPT OF ELECTRIC CHARGE, CURRENT, ELECTRICAL ENERGY
	08/09/2023	5	CONCEPTS OF SOURCE TRANSFORMATION TECHNIQUE AND MUTUAL INDUCTANCE
	09/09/2023	6	STAR TO DELTA AND DELTA TO STAR TRANSFORMATION
	11/09/2023	7	NUMERICAL SOLVING
2			NETWORK THEOREMS
	14/09/2023	8	CONCEPT OF MESH ANALYSIS, MESH EQUATIONS BY INSPECTION
	15/09/2023	9	CONCEPTS OF SUPER MESH AND IT'S PROBLEM DISCUSSION
	16/09/2023	10	CONCEPT OF NODAL ANALYSIS, NODAL EQUATIONS BY INSPECTION
	18/09/2023	11	CONCEPT SUPER NODE ANALYSIS AND IT'S PROBLEM DISCUSSION
	21/09/2023	12	STATEMENT OF SUPERPOSITION THEOREM, EXPLANATION, STEP FOR SOLUTION OF A NETWORK UTILIZING THE PRINCIPLE OF SUPERPOSITION
	22/09/2023	13	STATEMENT OF SUPERPOSITION THEOREM, EXPLANATION, STEP FOR SOLUTION OF A NETWORK UTILIZING THE PRINCIPLE OF SUPERPOSITION
	23/09/2023	14	STATEMENT OF NORTON'S THEOREM, EXPLANATION, STEPS FOR SOLUTION OF A NETWORK UTILIZING NORTON'S THEOREM
	25/09/2023	15	STATEMENT OF MAXIMUM POWER TRANSFER THEOREM, EXPLANATION, STEPS FOR SOLUTION

			OF A NETWORK UTILIZING MAXIMUM POWER TRANSFER THEOREM
	28/09/2023	16	STATEMENT OF MILLMAN THEOREM AND STEPS FOR SOLUTION OF A NETWORK UTILIZING THE PRINCIPLE OF MILLMAN THEOREM
	29/09/2023	17	STATEMENT OF RECIPROCITY THEOREM AND STEPS FOR SOLUTION OF A NETWORK UTILIZING THE PRINCIPLE OF RECIPROCITY THEOREM
	30/09/2023	18	SOLVE NUMERICAL PROBLEM
3	05/10/2023		POWER RELATION IN AC CIRCUITS AND TRANSIENT RESPONSE OF PASSIVE CIRCUIT
	06/10/2023	19	DEFINITION OF FREQUENCY, CYCLE, TIME PERIOD, AMPLITUDE AND CONCEPT OF AVERAGE VALUE, RMS VALUE
	07/10/2023	2023	CONCEPT OF INSTANTANEOUS POWER AND FORM FACTOR, APPARENT POWER, REACTIVE POWER AND POWER TRIANGLE OF AC WAVE
	09/10/2023	21	CONCEPT OF PHASOR AND PHASOR REPRESENTATION OF ALTERNATING QUANTITIES
	12/10/2023	22	INTRODUCTION TO A.C CIRCUIT AND CONCEPT OF A.C THROUGH R, C, AND L CIRCUIT
	13/10/2023	23	DC TRANSIENT BEHAVIOUR OF R-L, R-C, AND R-L-C SERIES CIRCUIT
	14/10/2023	24	PHASOR DIAGRAM OF SERIES R-L, R-C AND R-L-C SERIES CIRCUIT
	16/10/2023	25	INSTANTANEOUS POWER IN A.C CIRCUIT, POWER FACTOR
	19/10/2023	26	SOLUTION OF PROBLEM OF A.C THROUGH R-L, R-C, AND R-L-C SERIES CIRCUIT
	20/10/2023	27	DEFINITION OF TIME CONSTANT AND TIME CONSTANT OF R-L, R-C AND R-L-C CIRCUIT
4			RESONANCE AND COUPLED CIRCUIT
	21/10/2023	28	DERIVE THE RESONANT FREQUENCY OF SERIES RESONANCE CIRCUIT
	02/11/2023	29	DERIVE THE RESONANT FREQUENCY OF PARALLEL RESONANCE CIRCUIT
	03/11/2023	30	CONCEPT OF BANDWIDTH, SELECTIVITY AND Q-FACTOR IN SERIES CIRCUIT AND POWER FACTOR OF RESONANCE
	04/11/2023	31	DERIVE THE RESONANT FREQUENCY OF R-L, R-C, AND R-L-C CIRCUIT
	06/11/2023	32	COMPARISONS OF SERIES AND PARALLEL RESONANCE AND IT'S APPLICATION
	09/11/2023	33	CONCEPT OF SELF INDUCTANCE AND MUTUAL

			INDUCTANCE AND CONCEPTS OF CONDUCTIVELY COUPLED CIRCUIT AND MUTUAL IMPEDANCE
	10/11/2023	34	CONCEPT OF DOT CONVENTION IN COUPLED COILS AND MODELING OF COUPLED CIRCUITS AND COEFFICIENT OF COUPLING
	11/11/2023	35	CONCEPTS OF SERIES AND PARALLEL CONNECTION OF COUPLED INDUCTORS.
	13/11/2023	36	SOLVE NUMERICAL PROBLEM
		37	CLASS TEST
5	16/11/2023		LAPLACE TRANSFORM AND ITS APPLICATIONS
	17/11/2023	38	INTRODUCTION TO LAPLACE TRANSFORM AND LAPLACE TRANSFORM OF ELECTRICAL ELEMENTS
	18/11/2023	39	DERIVE THE EQUATIONS FOR CIRCUIT PARAMETERS OF STEP RESPONSE OF R-L, R-C AND R-L-C
	20/11/2023	40	REVISION AND SOLVE NUMERICAL PROBLEM
	23/11/2023	41	DERIVE THE EQUATIONS FOR CIRCUIT PARAMETERS OF IMPULSE RESPONSE OF R-L, R-C AND R-L-C
	24/11/2023	42	REVISION AND SOLVE NUMERICAL PROBLEM
	25/11/2023	43	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
6			TWO PORT NETWORK ANALYSIS
	27/11/2023	44	CONCEPT OF OPEN CIRCUIT IMPEDANCE (Z) PARAMETERS AND IT'S PROBLEM DISCUSSION
	01/12/2023	45	CONCEPT OF SHORT CIRCUIT IMPEDANCE (Y) PARAMETERS AND IT'S PROBLEM DISCUSSION
	02/12/2023	46	CONCEPT OF TRANSMISSION (ABCD) PARAMETERS AND IT'S PROBLEM DISCUSSION
	04/12/2023	47	CONCEPT OF HYBRID (H) PARAMETERS AND IT'S PROBLEM DISCUSSION
	07/12/2023	48	CONDITION OF RECIPROCITY AND SYMMETRY IN TWO PORT PARAMETER REPRESENTATION
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	15/12/2023	53	BUTTERWORTH FILTER
	16/12/2023	54	CONCEPT OF ATTENUATION AND GAIN, BEL, DECIBEL AND NEPER AND THEIR RELATIONS

18/12/2023	55	ATTENUATORS AND IT'S APPLICATION AND CLASSIFICATION OF T- TYPE AND P- TYPE ATTENUATORS
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