

Gandhi Polytechnic, Golanthara

Dept. of Electrical Engineering

LESSON PLAN

Subject :		Circuit and Network Theory	
Discipline: Electrical Engineering		Name of the Faculty: Er. Susanta Kumar Sahu	
Course Code:	TH-2	Semester:	3rd
Total Periods:	60	Examination:	2022(Winter)
Theory Periods:	4P/W	Class Test:	20
Maximum Marks:	100	End Semester Examination:	80
No's of Week	Periods in week	Theory Topics	
1st	1st	MAGNETIC CIRCUITS 1 . 1 Introduction	
	2nd	1 . 2 Magnetizing force, Intensity, MMF, flux and their relations 1 . 3 Permeability, reluctance and permeance	
	3rd	1 . 4 Analogy between electric and Magnetic Circuits	
	4th	1 . 5 B-H Curve 1 . 6 Series & parallel magnetic circuit. 1 . 7 Hysteresis loop	
2nd	1st	COUPLED CIRCUITS: 2 . 1 Self Inductance and Mutual Inductance	
	2nd	2 . 2 Conductively coupled circuit and mutual impedance	
	3rd	2 . 3 Dot convention 2 . 4 Coefficient of coupling	
	4th	2 . 5 Series and parallel connection of coupled inductors. 2 . 6 Solve numerical problems	
3rd	1st	CIRCUIT ELEMENTS AND ANALYSIS: 3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements	
	2nd	3 . 2 Mesh Analysis, Mesh Equations by inspection 3 . 3 Super mesh Analysis)	
	3rd	3 . 4 Nodal Analysis, Nodal Equations by inspection 3 . 5 Super node Analysis	
	4th	3 . 6 Source Transformation Technique 3 . 7 Solve numerical problems (With Independent Sources Only)	
4th	1st	NETWORK THEOREMS: 4.1 Star to delta and delta to star transformation	
	2nd	4.2 Super position Theorem	
	3rd	4.3 Thevenin's Theorem	
	4th	4.4 Norton's Theorem	
5th	1st	4.5 Maximum power Transfer Theorem	
	2nd	4.6 Solve numerical problems (With Independent Sources Only)	
	3rd	AC CIRCUIT AND RESONANCE: 5.1 A.C. through R-L, R-C	
	4th	A.C. through R-L-C Circuit	
6th	1st	5.2 Solution of problems of A.C. through R-L	
	2nd	Solution of problems of A.C. through R-C & R-L-C series Circuit by complex algebra method	
	3rd	Solution of problems of A.C. through R-L-C series Circuit by complex algebra method	
	4th	5.3 Solution of problems of A.C. through R-L, & R-L-C parallel & Composite Circuits	
7th	1st	5.3 Solution of problems of A.C. through R,C	
	2nd	5.4 Power factor & power triangle	
	3rd	5.5 Deduce expression for active, reactive, apparent power.	
	4th	5.6 Derive the resonant frequency of series resonance and parallel resonance circuit	
8th	1st	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit	
	2nd	5.8 Solve numerical problems	
	3rd	POLYPHASE CIRCUIT 6.1 Concept of poly-phase system and phase sequence	
	4th	6.2 Relation between phase and line quantities in star & delta connection	
9th	1st	6.3 Power equation in 3-phase balanced circuit.	
	2nd	6.4 Solve numerical problems 6.5 Measurement of 3-phase power by two wattmeter method.	
	3rd	6.6 Solve numerical problems.	
	4th	TRANSIENTS: 7.1 Steady state & transient state response.	

10th	1st	7.2 Response to R-L, R-C & RLC circuit under DC condition.
	2nd	7.3 Solve numerical problems
	3rd	TWO-PORT NETWORK: 8.1 Open circuit impedance (z) parameters
	4th	8.2 Short circuit admittance (y) parameters
11th	1st	8.3 Transmission (ABCD) parameters
	2nd	8.4 Hybrid (h) parameters.
	3rd	8.5 Inter relationships of different parameters. 8.6 T and π representation.
	4th	8.7 Solve numerical problems
12th	1st	FILTERS: 9.1 Define filter
	2nd	9.2 Classification of pass Band, stop Band and cut-off frequency
	3rd	9.3 Classification of filters. 9.4 Constant – K low pass filter.
	4th	9.5 Constant – K high pass filter. 9.6 Constant – K Band pass filter.
13th	1st	9.7 Constant – K Band elimination filter.
	2nd	9.8 Solve Numerical problems
	3rd	Revisions
	4th	Revisions
14th	1st	Revisions
	2nd	Revisions
	3rd	Revisions
	4th	Revisions
15th	1st	Revisions
	2nd	Revisions
	3rd	Revisions
	4th	Revisions