GIET
In Pursuit of Innovation

GIET POLYTECHNIC, JAGATPUR, CUTTACK

LESSON PLAN

Discipline: ELECTRICAL	Semester: 5th	Name Of The Teaching Faculty: SUDIPTA KUMAR DAS
Subject: CIRCUIT & NETWORK THEORY (TH 2)	No. Of Days Per Week Class Allotted: 05 P (4p + 1 tutorial)	Semester From Date: 01.07.2024 To Date: 08.11.2024 No. of weeks: 15

Week	Class Day	Theory Topic
1st week	1st	UNIT 1 : MAGNETIC CIRCUIT ➢ 1.1 : Introduction
	2nd	➢ 1.2 : Magnetizing force , intensity, mmf , flux & their relations
	3rd	➢ 1.3: Permiability, reluctance & permeance
	4th	➢ 1.4: Analogy between Electric & magnetic circuit
	5th	➢ 1.4: Analogy between Electric & magnetic circuit
2nd week	1st	➢ 1.5: B-H Curve
	2nd	➢ 1.6: Series & parallel magnetic circuit
	3rd	➢ 1.7: Hysteresis loop
	4th	➢ 1.7: Hysteresis loop
	5th	UNIT 2 : COUPLED CIRCUIT ➢ 2.1: Self inductance & mutual inductance
3rd week	1st	➢ 2.2: Conductivity & Coupled circuit & mutual impedance
	2nd	➢ 2.3: Dot convention
	3rd	➢ 2.4: Coefficient of coupling
	4th	➢ 2.5: Series & parallel connection of coupled inductors
	5th	➢ 2.5: Series & parallel connection of coupled inductors
4th week	1st	➢ 2.6: Numerical problems
	2nd	➢ CLASS TEST
	3rd	UNIT 3: CIRCUIT ELEMENTS & ANALYSIS ➢ 3.1: Active , passive, unilateral & bilateral , linear & non linear elements
	4th	➢ 3.1: Active , passive, unilateral & bilateral , linear & non linear elements
	5th	➢ 3.2: Mesh analysis , Mesh equations by inspection
5th week	1st	➢ 3.3: Super mesh analysis
	2nd	➢ 3.4: Nodal analysis , nodal equation by inspection
	3rd	➢ 3.5: Super node analysis
	4th	➢ 3.6: Source transformation techniques
	5th	➢ 3.7: SOLVE NUMERICAL PROBLEMS(WITH INDEPENDENT SOURCE ONLY)
6th week	1st	➢ 3.7: SOLVE NUMERICAL PROBLEMS(WITH INDEPENDENT SOURCE ONLY)
	2nd	➢ 3.7: SOLVE NUMERICAL PROBLEMS(WITH INDEPENDENT SOURCE ONLY)
	3rd	UNIT 4 : NETWORK THEOREMS ➢ 4.1: Star to Delta & Delta to Star
	4th	➢ 4.2: Superposition theorem
	5th	➢ 4.2: Numerical problems on superposition theorem

7th week	1st	➢ 4.3: Thevenin's theorem
	2nd	➢ 4.3: Numerical problems on Thevenin's theorem
	3rd	➢ 4.4: Norton' theorem
	4th	➢ 4.4: Numerical problems on Norton's theorem
	5th	➢ 4.5: Maximum power transfer theorem
8th week	1st	➢ 4.5: Numerical problems on Maximum Power Transfer theorem
	2nd	➢ CLASS TEST
	3rd	UNIT 5 : AC CIRCUIT & RESONANCE ➢ 5.1: AC through R-L,R-C & R-L-C circuit
	4th	➢ 5.2: Solution problems of AC through R-L , R-C & R-L-C series circuit by complex algebra method
	5th	➢ 5.2: Solution problems of AC through R-L , R-C & R-L-C series circuit by complex algebra method
9th week	1st	➢ 5.3: Solution of problems of AC through R-L , R-C & R-L-C parallel & Composite Circuits
	2nd	➢ 5.3: Solution of problems of AC through R-L , R-C & R-L-C parallel & Composite Circuits
	3rd	➢ 5.4: Power factor & Power triangle
	4th	➢ 5.5: Deduce expression of active , reactive apparent power
	5th	➢ 5.6: Derive the resonant frequency of series resonance and parallel resonance circuit
10th week	1st	➢ 5.7: Define Bandwidth , Selectivity & Q-factor in series circuit
	2nd	➢ 5.8: SOLVE NUMERICAL PROBLEMS
	3rd	UNIT 6 : POLYPHASE CIRCUIT ➢ 6.1: Concept of poly-phase system and phase sequence
	4th	➢ 6.2: Relation between phase and line quantities in star & delta connections
	5th	➢ 6.3: Power equation in 3-phase balanced circuit
11th week	1st	➢ 6.4: Solve numerical problems
	2nd	➢ 6.5: Measurement of 3-phase power by two wattmeter method
	3rd	➢ 6.6: SOLVE NUMERICAL PROBLEMS
	4th	UNIT 7: TRANSIENTS ➢ 7.1: Steady state response
	5th	➢ 7.1: Transient state response
12th week	1st	➢ 7.2: Response to R-L circuit under DC condition
	2nd	➢ 7.2: Response to R-C circuit under DC condition
	3rd	➢ 7.2: Response to R-L-C circuit under DC condition
	4th	➢ 7.3: SOLVE NUMERICAL PROBLEMS
	5th	UNIT 8 : TWO-PORT NETWORK ➢ 8.1: Open circuit impedance (z) parameters
13th week	1st	➢ 8.2: Short circuit admittance (Y) parameters
	2nd	➢ 8.3: Transmission (ABCD) parameters
	3rd	➢ 8.4: Hybrid (h) parameters
	4th	➢ 8.5: Inter relationships of different parameters
	5th	➢ 8.6: T and π representations
14th week	1st	➢ 8.7: SOLVE NUMERICAL PROBLEMS
	2nd	➢ CLASS TEST
	3rd	UNIT 9: FILTERS ➢ 9.1: Define filter ➢ 9.2: Classification of pass Band, stop Band and cut-off frequency

	4th	➢ 9.3: Classification of filters ➢ 9.4: Constant-k low pass filter
	5th	➢ 9.5: Constant – k high pass filter
15th week	1st	➢ 9.6: Constant – K Band pass filter
	2nd	➢ 9.7: Constant – K Band elimination filter
	3rd	➢ 9.8: SOLVE NUMERICAL PROBLEMS
	4th	➢ REVISION
	5th	➢ REVISION

29.06.2024
Signature of faculty

29/6/24
Signature of Sr. lecturer

Head of Dept. (HOD)
Electrical & ETC E...
G. E.T (POLY)...

29/6/24
Signature of principal