PNS SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

Branch: Electrical Engg.	Semester: 3rd	Name of the Lecturer: **Chacha Amitav Tripathy**
Subject: CNT	Classes Alloted in a Week: 6	Duration of Semester: 01.08.2023 - 30.11.2023
Week	Class Day	Theory / Practical Topic
1st	1	**Magnetic Circuit:** Introduction
	2	Magnetizing force, Intensity, MMF, flux and their relations
	3	Permeability, reluctance and permeance
	4	Analogy between electric and Magnetic Circuits
	5	B-H Curve
	6	Series & parallel magnetic circuit
2nd	1	Hysteresis loop
	2	**Coupled Circuit:** Self Inductance and Mutual Inductance
	3	Conductively coupled circuit and mutual impedance,Dot convention
	4	Dot convention,Cofficent of coupling
	5	Series and parallel connection of coupled inductors
	6	Solved Numericals problems
3rd	1	**Circuit Elements & Analysis:** Active, Passive, Unilateral & bilateral, Linear & Non linear elements, Mesh Analysis & Mesh Equations by inspection
	2	Super mesh Analysis, Solved Numericals problems
	3	Nodal Analysis, Nodal Equations by inspection & Super node Analysis
	4	Solved Numericals problems
	5	Source Transformation Technique
	6	Solve numerical problems
4th	1	**Network Theorems:** Star to delta and delta to star transformation
	2	Solve numerical problems
	3	Super position Theorem, Solve numerical problems
	4	Thevenin's Theorem, Solve numerical problems
	5	Solve numerical problems
	6	Norton's Theorem, Solve numerical problems
5th	1	Solve numerical problems
	2	Maximum power Transfer Theorem, Solve numerical problems
	3	**AC Circuit & Resonance:** A.C. through R-L, R-C & R-L-C Circuit
	4	Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	5	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	6	Power factor & power triangle, Deduce expression for active, reactive, apparent power

6th	1	Derive the resonant frequency of series resonance and parallel resonance circuit
	2	Define Bandwidth, Selectivity & Q-factor in series circuit
	3	Solve numerical problems
	4	Solve numerical problems
	5	**Poly-phase Circuit:** Concept of poly-phase system and phase sequence
	6	Relation between phase and line quantities in star & delta connection
7th	1	Power equation in 3-phase balanced circuit
	2	Solve numerical problems
	3	Measurement of 3-phase power by two wattmeter method
	4	Solve numerical problems
	5	**Transients:** Steady state & transient state response.
	6	Response to R-L circuit under DC condition
8th	1	Response to R-C circuit under DC condition
	2	Response to RLC circuit under DC condition
	3	Solve numerical problems
	4	Solve numerical problems
	5	**Two-Port Network:** Open circuit impedance (z) parameters
	6	Short circuit admittance (y) parameters
9th	1	Solve Numerical problems
	2	Transmission (ABCD) parameters
	3	Hybrid (h) parameters.
	4	Inter relationships of different parameters
	5	T and π representation.
	6	Solve numerical problems
10th	1	**Filters:** Define filter,Classification of pass Band, stop Band and cut-off frequency
	2	Classification of filters, Constant – K low pass filter.
	3	Constant – K high pass filter, Constant – K Band pass filter
	4	Solve Numerical problems
	5	Constant – K Band pass filter, Constant – K Band elimination filter.
	6	Solve Numerical problems

Signature of the
Lecturer

Signature of the
H.O.D.