Discipline: Electrical Engg.	Semester: 3rd	Name of the Teaching Faculty: Er. Saish Ranjan Dhar & Er. Satyakam Mahapatra
Subject: Th 2 Circuit and Network Theory	No of Days / Per week class allotted: 5 Classess P/W - (75)	Semester From Date: 15/09/2022 To Date: 22/09/2022 No. Of Weeks: 15
WEEK	**CLASS DAY**	**THEORY/PRACTICAL TOPICS**
1st	1st	**CHAPER 1. MAGNETIC CIRCUITS** 1.1 Introduction
	2nd	1.2 Magnetizing force, Intensity, MMF, flux and their relations
	3rd	1.3 Permeability, reluctance and permeance
	4th	1.4Analogy between electric and Magnetic Circuits
	5th	1.5 B-H Curve
2nd	1st	1.6 Series & Parallel magnetic circuit.
	2nd	1.7 Hysteresis loop and Doubt clear class
	3rd	**CHAPER 2. COUPLED CIRCUITS** 2.1 Self Inductance and Mutual Inductance
	4th	2.2 Conductively coupled circuit and mutual impedance
	5th	2.3 Dot convention, Coefficient of coupling
3rd	1st	2.4 Series and parallel connection of coupled inductors.
	2nd	2.5 Solve numerical problems.
	3rd	**CHAPER 3. CIRCUIT ELEMENTS AND ANALYSIS** 3.1 Active, Passive, Unilateral & bilateral, Linear & Non
	4th	3.2 Mesh Analysis, Mesh Equations by inspection
	5th	Numerical solving
4th	1st	3.3 Super mesh Analysis
	2nd	3.4 Nodal Analysis, Nodal Equations by inspection
	3rd	3.5 Super node Analysis with Numerical solving
	4th	3.6 Source Transformation Technique
	5th	3.7 Solve numerical problems (With Independent Sources Only)
5th	1st	Class Test and question Answer Discussion
	2nd	**CHAPER4. NETWORK THEOREMS** **4**.1 Star to delta and delta to star transformation
	3rd	Numerical solving

	4th	4.2 Super position Theorem
	5th	Numerical solving
6th	1st	4.3 Thevenin's Theorem
	2nd	4.4 Norton's Theorem
		Numerical solving
	3rd	4.5 Maximum power Transfer Theorem
	4th	4.6 Solve numerical problems(with independent sources only)
	5th	Previous Year Question answer discussion.
7th	1st	**CHAPER5. AC CIRCUIT AND RESONANCE** 5.1 A.C. through R-L, R-C
	2nd	A.C. through R-L-C Circuit.
	3rd	5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	4th	5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	5th	5.4 Power factor & power triangle
8th	1st	5.5 Deduce expression for active, reactive, apparent power.
	2nd	5.6 Derive the resonant frequency of series resonance circuit
	3rd	Derive the resonant frequency of parallel resonance circuit
	4th	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit
	5th	5.8 Solve numerical problems
9th	1st	Previous Year Question answer discussion.
	2nd	**CHAPER6. POLYPHASE CIRCUIT** 6.1 Concept of poly-phase system and phase sequence
	3rd	6.2 Relation between phase and line quantities in star connection
	4th	Relation between phase and line quantities in delta connection
	5th	6.3 Power equation in 3-phase balanced circuit.
10th	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	**CHAPER7. TRANSIENTS** 7.1 Steady state response

	5th	7.2 Steady transient state response
11th	1st	7.3 Response to R-L circuit under DC condition.
	2nd	4.4 Response to R-C, circuit under DC condition.
	3rd	Numerical solving
	4th	7.5 Response to RLC circuit under DC condition.
	5th	7.6 Solve numerical problems
12th	1st	Class Test and question Answer Discussion
	2nd	**CHAPER 8. TWO-PORT NETWORK** 8.1 Open circuit impedance (z) parameters
	3rd	8.2 Short circuit admittance (y) parameters
	4th	8.3 Transmission (ABCD) parameters
	5th	8.4 Hybrid (h) parameters
13th	1st	8.5 Inter relationships between Z-Y parameter.
	2nd	Solve numerical problems
	3rd	8.6 Inter relationships between Y-H parameter.
	4th	Solve numerical problems
	5th	8.7 Inter relationships between H-Z parameter.
14th	1st	8.8 T and π representation.
	2nd	Solve numerical problems
	3rd	**CHAPER 9. FILTERS:** 9.1 Define filter Classification of filter.
	4th	9.2 Classification of pass Band, stop Band and cut-off frequency.
	5th	9.3 Constant – K low pass filter.
15th	1st	9.4 Constant – K high pass filter
	2nd	9.5 Constant – K Band pass filter.
	3rd	9.6 Constant – K Band elimination filter
	4th	Previous Year Question answer discussion.
	5th	Previous Year Question answer discussion.