

DISCIPLINE: EEE	SEMESTER: 3rd	NAME OF THE TEACHING FACULTY: DEEPAK PATRA, LECTURER (EE)
SUBJECT: Circuit and Network Theory		NO. OF DAYS/ WEEK CLASS ALLOTTED-75
WEEK	CLASS DAY	THEORY TOPICS
1 ST	01	MAGNETIC CIRCUITS Introduction to magnetic circuit through suitable example
	02	Magnetizing force, Intensity, MMF, flux and their relations
	03	Permeability, reluctance and permeance
	04	Analogy between electric and Magnetic Circuits
	05	B-H Curve
2 ND	06	Series & parallel magnetic circuit.
	07	Hysteresis loop
	08	COUPLED CIRCUITS: Self Inductance and Mutual Inductance
	09	Conductively coupled circuit and mutual impedance
	10	Dot convention, Coefficient of coupling
3 RD	11	Series and parallel connection of coupled inductors.
	12	Solve numerical problems on magnetic circuit
	13	CIRCUIT ELEMENTS AND ANALYSIS: Active, Passive, Unilateral & bilateral, Linear & Nonlinear elements
	14	Mesh Analysis, Mesh Equations by inspection
	15	Super mesh Analysis
4 TH	16	Nodal Analysis, Nodal Equations by inspection
	17	Super node Analysis.
	18	Source Transformation Technique
	19	NETWORK THEOREMS: Star to delta and delta to star transformation
	20	Super position Theorem
5 TH	21	Solve numerical problems on Super position Theorem
	22	Thevenin's Theorem
	23	Maximum power Transfer Theorem.
	24	Solve numerical problems on Thevenin's Theorem And Maximum power Transfer Theorem.
	25	Norton's Theorem
6 TH	26	Solve numerical problems on Norton's Theorem
	27	AC CIRCUIT AND RESONANCE: A.C. through R-L, R-C & R-L-C Circuit
	28	Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
	29	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	30	Power factor & power triangle.
7 TH	31	Deduce expression for active, reactive, apparent power.
	32	Derive the resonant frequency of series resonance and parallel Resonance circuit
	33	Define Bandwidth, Selectivity & Q-factor in series circuit

	34	Solve numerical problems on series resonance and parallel resonance circuit
	35	POLYPHASECIRCUIT Concept of poly-phase system and phase sequence
8 TH	36	Relation between phase and line quantities in star & delta connection
	37	Power equation in 3-phase balanced circuit.
	38	Solve numerical problems
	39	Measurement of 3-phase power by two wattmeter method.
	40	Solve numerical problems.
9 TH	41	TRANSIENTS: Steady state & transient state response.
	42	Response to R-L circuit under DC condition.
	43	Response to R-C circuit under DC condition.
	44	Response to RLC circuit under DC condition.
	45	Solve numerical problems.
10 TH	46	Solve numerical problems.
	47	TWO-PORTNETWORK: Open circuit impedance (z) parameters
	48	Short circuit admittance (y) parameters
	49	Transmission (ABCD) parameters
	50	Hybrid (h) parameters.
11 TH	51	Interrelationships of different parameters.
	52	T and π representation.
	53	Solve numerical problems.
	54	Solve numerical problems.
	55	FILTERS: Define filter Classification of pass Band, stop Band and cut-off frequency.
12 TH	56	Classification of filters. Constant -K low pass filter.
	57	Constant -K high pass filter.
	58	Constant-K Band pass filter.
	59	Constant-K Band elimination filter.
	60	Solve Numerical problems
13 TH	61	Revision of chapter1.
	62	Revision of chapter2.
	63	Revision of chapter2
	64	Revision of chapter3
	65	Revision of chapter3
14 TH	66	Revision of chapter4
	67	Revision of chapter4
	68	Revision of chapter5
	69	Revision of chapter5
	70	Revision of chapter6
15 TH	71	Revision of chapter6
	72	Revision of chapter7
	73	Revision of chapter8
	74	Revision of chapter8
	75	Revision of chapter9