

		Lesson Plan CIRCUIT AND NETWORK THEORY Hemanta kumar Sethi		
Month	MODULE OR UNIT	COURSE TO BE COVERED	TOTAL NO OF CLASSES	REMARK
SEPTEMBER	UNIT-1	1. MAGNETIC CIRCUITS		
		1 . 1 Introduction	07	
		1 . 2 Magnetizing force, Intensity, MMF, flux and their relations	01	
		1 . 3 Permeability, reluctance and permeance	01	
		1 . 4 Analogy between electric and Magnetic Circuits	01	
		1 . 5 B-H Curve	01	
		1 . 6 Series & parallel magnetic circuit.	01	
		1 . 7 Hysteresis loop	01	
	UNIT-II	2. COUPLED CIRCUITS:	05	
		2 . 1 Self Inductance and Mutual Inductance	01	
		2 . 2 Conductively coupled circuit and mutual impedance	01	
		2 . 3 Dot convention	01	
		2 . 4 Coefficient of coupling	01	
		2 . 5 Series and parallel connection of coupled inductors.	01	
		2 . 6 Solve numerical problems	01	
OCTOBER	UNIT-III	3. CIRCUIT ELEMENTS AND ANALYSIS:	07	
		3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements	01	
		3 . 2 Mesh Analysis, Mesh Equations by inspection	01	
		3 . 3 Super mesh Analysis	01	
		3 . 4 Nodal Analysis, Nodal Equations by inspection	01	
		3 . 5 Super node Analysis.	01	
		3 . 6 Source Transformation Technique	01	
		3 . 7 Solve numerical problems (With Independent Sources Only)	01	
	UNIT-IV	4. NETWORK THEOREMS:	06	
		4.1 Star to delta and delta to star transformation	01	
		4.2 Super position Theorem	01	
		4.3 Thevenin's Theorem	01	
		4.4 Norton's Theorem	01	
		4.5 Maximum power Transfer Theorem.	01	
		4.6 Solve numerical problems (With Independent Sources Only)	01	
NOVEMBER	UNIT-V	5. AC CIRCUIT AND RESONANCE:	08	
		5.1 A.C. through R-L, R-C & R-L-C Circuit	01	
		5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.	01	
		5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits	01	
		5.4 Power factor & power triangle.	01	
		5.5 Deduce expression for active, reactive, apparent power	01	

		5.6 Derive the resonant frequency of series resonance and parallel resonance circuit	01	
		5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.	01	
		5.8 Solve numerical problems	01	
	UNIT-VI	6. POLYPHASE CIRCUIT	06	
		6.1 Concept of poly-phase system and phase sequence	01	
		6.2 Relation between phase and line quantities in star & delta connection	01	
		6.3 Power equation in 3-phase balanced circuit.	01	
		6.4 Solve numerical problems	01	
		6.5 Measurement of 3-phase power by two wattmeter method	01	
		6.6 Solve numerical problems	01	
DECEMBER	UNIT-VII	7. TRANSIENTS:	02	
		7.1 Steady state & transient state response.	01	
		7.2 Response to R-L, R-C & RLC circuit under DC condition	01	
		7.3 Solve numerical problems	01	
	UNIT-VIII	8. TWO-PORT NETWORK:	07	
		8.1 Open circuit impedance (z) parameters	01	
		8.2 Short circuit admittance (y) parameters	01	
		8.3 Transmission (ABCD) parameters	01	
		8.4 Hybrid (h) parameters.	01	
		8.5 Inter relationships of different parameters	01	
		8.6 T and π representation.	01	
		8.7 Solve numerical problems	01	
JANUARY	UNIT-IX	9. FILTERS:	08	
		9.1 Define filter	01	
		9.2 Classification of pass Band, stop Band and cut-off frequency.	01	
		9.3 Classification of filters.	01	
		9.4 Constant – K low pass filter.	01	
		9.5 Constant – K high pass filter.	01	
		9.6 Constant – K Band pass filter.	01	
		9.7 Constant – K Band elimination filter.	01	
		9.8 Solve Numerical problems	01	