

Government Polytechnic Nawada

Department of Science & Technology, Govt. of Bihar

Lesson Plan

Name: Ajeet Kumar

Designation: Lecturer

Dept : Electrical Engg

Target Student: 3rd Sem EE

Subject: Electrical Circuits and Network

Subject code:1620302

Subject Credits: 03

SL. No.	Name Of Unit	Lecture Sequence No.	Name of topic
1.	Unit-1 Review of Basic concepts of electrical Circuit	1	Description of Electric Circuit Elements R & L
		2	Description of Electric Circuit Elements C
		3	Explanation about Energy Sources
		4	A.C. waveform and definition of various terms associated with it
		5	Response of pure R, L to AC supplies
		6	Response of pure C to AC supplies. Vector Representation of alternating quantity.
2.	Unit-2 Single phase AC Circuits	7	Impedance, reactance, phasor diagram, impedance triangle, power factor, Average power, Apparent power, Reactive power, Power triangle (Numerical of Series R-L AC circuits).
		8	Impedance, reactance, phasor diagram, impedance triangle, power factor, Average power, Apparent power, Reactive power, Power triangle (Numerical of Series R-C AC circuits).
		9	Impedance, reactance, phasor diagram, impedance triangle, power factor, Average power, Apparent power, Reactive power, Power triangle (Numerical of Series R-L-C AC circuits).
		10	Series Resonance, quality factor
		11	Numerical of Series Resonance
		12	Admittance, Susceptance, Solution by admittance method, phasor diagram and complex Algebra method of Parallel R-L AC circuits .

		13	Admittance, Susceptance, Solution by admittance method, phasor diagram and complex Algebra method of Parallel R-C AC circuits .
		14	Admittance, Susceptance, Solution by admittance method, phasor diagram and complex Algebra method of Parallel R-L-C AC circuits .
		15	Parallel resonance
		16	Numericals of Parallel resonance
		17	Quality factor and bandwidth of Parallel Resonance
		18	Comparison of series and Parallel circuits
3.	Unit-3 Poly phase AC Circuits	19	Generation of three phase e. m. f.
		20	Phase sequence
		21	Polarity marking
		22	Types of three-phase connections.
		23	Concept of balanced load
		24	Concept of unbalanced load
		25	Line, phase quantities and power in three phase system with balanced star load
		26	Line, phase quantities and power in three phase system with balanced delta load
		27	Interrelationship between Line and Phase quantities for balanced Star load and balanced Delta load
		28	Advantages of Polyphase circuits over single phase circuits
4.	Unit-4 Principles of circuit Analysis (AC and DC circuits)	29	Concept of Mesh Analysis
		30	Numericals of Mesh analysis with Independent voltage sources
		31	Numericals of Mesh analysis with Independent Current sources
		32	Concept of Node Analysis
		33	Numericals of Mesh analysis with Independent voltage sources
		34	Numericals of Mesh analysis with Independent Current sources
		35	Star to delta & Delta to star transformations
		36	Numericals of Star to delta & Delta to star transformations
5.	Unit-5 Network Theorems (Statement,	37	Concept of Superposition Theorem
		38	Numericals related to Superposition Theorem

procedure, applications and areas of applications, Simple Numerical)	39	Concept of Thevenin's Theorem
	40	Numericals related to Thevenin's Theorem for the networks having Independent Voltage or Current Sources.
	41	Concept of Norton's Theorem
	42	Numericals related Norton's Theorem for the networks having Independent Voltage or Current Sources.
	43	Concept of Source conversion ;ideal voltage to current source and Vice-Versa.
	44	Numericals related to Concept of Source conversion
	45	Concept of Maximum power transfer Theorem
	46	Numericals related to Maximum power transfer Theorem
	47	Numericals related to Thevenin's Theorem for the networks having dependent Voltage or Current Sources.
	48	Numericals related to Norton's Theorem for the networks having dependent Voltage or Current Sources.

Agut kumar

Signature of the faculty