

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2022-2023


Discipline: Electrical Engg. Semester: 3rd

Name of the Teaching Faculty: Bana Bihari Biswal

Subject: Circuit & Network Theory No. of Days/per week class allotted 4

Semester From Date : 15-9-22 To Date : 22-12-22 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
1	1	Introduction, Magnetic effect
	2	Magnetising force, intensity, mmf, flux
	3	Permeability, reluctance & permeance
	4	Analogy Electric & Magnetic circuit.
2	5	B-H curve.
	6	Series magnetic circuit.
	7	Parallel magnetic circuit, Hysteresis loop
	8	Self & Mutual inductance, coefficient of coupling.
3	9	Inductively coupled ckt & mutual impedance.
	10	Dot conventions.
	11	Series, parallel connection of coupled ckt.
	12	Numerical problems


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Week	Class Day	Theory /Practical Topics
4	13.	Active & passive, linear & non-linear, unilateral & bilateral elements
	14.	Mesh analysis, Mesh eq ⁿ by inspection
	15.	super mesh analysis.
	16	Nodal analysis - Node eqs by inspection
5	17.	Super-node analysis.
	18.	Source transformation, Numerical problems
	19.	star/delta & delta/star transformation
	20.	superposition theorem.
6	21.	Thevenin's theorem.
	22.	Norton's theorem.
	23.	Maximum power transfer theorem.
	24.	Numerical problems


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Week	Class Day	Theory /Practical Topics
7	25	Numerical problems
	26	AC through RL, RC & RLC ckt.
	27	solutions of problems of AC through RL, RC & RLC series ckt by complex algebra method.
	28	solutions of problems of AC through RL, RC & RLC parallel & composite ckt.
8	29	power factor & power triangle.
	30	Expression for active, reactive & apparent power.
	31	Derive resonant frequency of series & parallel ckt
	32	Bandwidth, selectivity & Q factor in series ckt.
9	33	Numerical problems
	34	concept of polyphase system & phase sequence.
	35	Relation between phase & line quantities in Y & Δ connection.
	36	Power equation in 3- ϕ balanced ckt


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Week	Class Day	Theory / Practical Topics
10	37	Numerical problems
	38	Measurement of 3- ϕ power by two wattmeter method.
	39	Numerical problems
	40	steady state & transient state response;
11	41	DC response of RL ckt.
	42	DC response of RC ckt.
	43	DC response of RLC ckt.
	44	Numerical problems
12	45	Two port network, parameters
	46	open circuit impedance (z) parameter
	47	short circuit admittance (y) parameter.
	48	Transmission (ABCD) parameter.


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Week	Class Day	Theory / Practical Topics
13	49.	Hybrid (h) parameters.
	50.	Interrelationships of different parameters
	51.	combination of two port networks
	52.	T & π representations.
14.	52.	Numerical problems
	54.	Definition & classification of filter, Bands.
	55.	constant k. low pass filter
	56.	constant k. high pass filter
15	57.	constant k. band pass filter
	58.	constant k. band stop filter
	59	Numerical problem.
	60.	Numerical problem.


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