LESSON PLAN

SUB:- ***CIRCUIT & NETWORK THEORY***

BRANCH:- ELECTRICAL ENGG.

SEMESTER:3rd

NAME OF FACULTY: - ASHWINI KUMAR SAHU

GOVERNMENT POLYTECHNIC, BHADRAK

SESSION:2024-25

Hod Electrical

HOD (ELECT.)
G.P.BHADRAK

Academic Co-ordinator

Academic Co-ordinator

Principal
Govt. Polytechnic Bhadrak

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Govt.Polytechnic
Bhadrak

DISCIPLINE ***ELECTRICAL***	SEMESTER ***3RD***	NAME OF THE TEACHING FACULTY Ashwini Kumar Sahu (Sr.Lect. in Elect. Engg)
SUBJECT ***CIRCUIT & NETWORK THEORY***	NO. OF DAYS/WEEK CLASS ALLOTTED - 75	SEMESTER FROM DATE 01.07.2024 to 08.11.2024
WEEK	CLASS DAY	THEORY TOPICS
1ST	01	Introduction of magnetic circuit Magnetizing force, Intensity
	02	MMF, flux and their relations
	03	Permeability, reluctance and permeance
	04	Analogy between electric and Magnetic Circuits
	05	Solve numerical problems
2ND	06	B-H Curve
	07	Series & parallel magnetic circuit
	08	Hysteresis loop
	09	Self Inductance and Mutual Inductance
	10	Solve numerical problems
3RD	11	Conductively coupled circuit and mutual impedance.
	12	Dot convention
	13	Coefficient of coupling
	14	Series and parallel connection of coupled inductors
	15	Solve numerical problems
4TH	16	Active, Passive, Unilateral & bilateral, Linear & Non linear elements
	17	Mesh Analysis
	18	Mesh Equations by inspection
	19	Super mesh Analysis
	20	Solve numerical problems
5TH	21	Nodal Analysis
	22	Nodal Equations by inspection

	23	Super node Analysis
	24	Source Transformation Technique
	25	Solve numerical problems
6TH	26	Star to delta and delta to star transformation
	27	Super position Theorem
	28	Thevenin's Theorem
	29	Norton's Theorem.
	30	Solve numerical problems (With Independent Sources Only)
7TH	31	Maximum power Transfer Theorem
	32	Solve numerical problems (With Independent Sources Only)
	33	A.C. through R-L, R-C

	34	A.C. through R-L-C
	35	Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method.
8TH	36	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits.
	37	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits.
	38	Solve numerical problems
	39	Solve numerical problems
	40	Power factor & power triangle
9TH	41	Deduce expression for active, reactive, apparent power
	42	Derive the resonant frequency of series resonance and parallel resonance circuit
	43	Define Bandwidth, Selectivity & Q-factor in series circuit
	44	Solve numerical problems
	45	Solve numerical problems
10TH	46	Concept of poly-phase system and phase sequence.
	47	Relation between phase and line quantities in star & delta connection.
	48	Power equation in 3-phase balanced circuit.

	49	Measurement of 3-phase power by two wattmeter method.
	50	Solve numerical problems.
11TH	51	Steady state & transient state response..
	52	Response to R-L circuit under DC condition.
	53	Response to R-C circuit under DC condition.
	54	Response to RLC circuit under DC condition
	55	Solve numerical problems
12TH	56	Solve numerical problems
	57	Open circuit impedance (z) parameters
	58	Short circuit admittance (y) parameters
	59	Transmission (ABCD) parameters.
	60	Hybrid (h) parameters..
13TH	61	Inter relationships of different parameters.
	62	Inter relationships of different parameters.
	63	T representation..

	64	π representation
	65	Solve numerical problems.
14TH	66	Solve numerical problems.
	67	Define filter and classification of filter
	68	Define pass Band, stop Band and cut-off frequency
	69	Constant – K low pass filter
	70	Constant – K high pass filter.
15TH	71	Constant – K Band pass filte
	72	Constant – K Band elimination filter
	73	Solve Numerical problems
	74	Solve Numerical problems
	75	Solve Numerical problems

ASHWIN [illegible]
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