

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline	Semester	Name of the Teaching Faculty
Subject	No. of days per Week Class Alloted	Semester from Dt. <u>4.10.21</u> To Dt. <u>8.1.22</u> No. of Weeks: <u>14</u>
Week	Class Day	Theory / Practical Topics
1st	1st day -	<u>MAGNETIC CIRCUITS</u> :- Introduction. magnetizing force, intensity, m.m.f, flux and their relations. permeability, reluctance and permeance. Analogy between electric and magnetic circuits. B-H curve. Series and parallel magnetic circuit. Hysteresis loop.
	2nd day -	
	3rd day -	
	4th day	
	5th day	
2nd	1st day	<u>COUPLED CIRCUITS</u> :- self inductance and mutual inductance. Conductively coupled circuit and mutual impedance. Dot convention. Coefficient of coupling. Series and parallel connection of coupled inductors. Solve numerical problems.
3rd	2nd day	
	3rd day	
4th	1st day	<u>CIRCUIT ELEMENTS AND ANALYSIS</u> :- Active, Passive, Unilateral & bilateral, Linear and nonlinear elements. mesh analysis, mesh equations by inspection. Super mesh analysis. Nodal analysis, Nodal equations by inspection. Super node analysis. Source transformation technique Solve numerical problems (with independent sources only)
	2nd day	
	3rd day	
	4th day	
	5th day	
5th	1st day	
	2nd day	

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6 th	3 rd day	<u>NETWORK THEOREMS:-</u> Star to delta and delta to Star transformation.
	4 th day	Superposition theorem.
	5 th day	Thevenin's theorem.
	1 st day	Norton's theorem.
	2 nd day	Maximum power transfer theorem.
	3 rd day	Solve numerical problems (with independent sources only)
7 th	4 th day	<u>AC CIRCUIT AND RESONANCE:-</u>
	5 th day	A.C through R-L, R-C and R-L-C circuit.
	1 st day	Solution of problems of A.C through R-L, R-C & R-L-C Series circuit.
	2 nd day	Complex algebra method.
	3 rd day	Solution of problems of A.C through R-L, R-C & R-L-C parallel & composite circuits.
8 th	4 th day	Power factor and power triangle.
	1 st day	Derive expression for active, reactive, apparent power.
	2 nd day	Derive the resonant frequency of series resonance and parallel resonance circuit.
	3 rd day	Define Bandwidth, selectivity & Q-factor in series circuit.
	4 th day	Solve numerical problems.
9 th	5 th day	<u>POLYPHASE CIRCUIT:-</u>
	1 st day	Concept of poly-phase system and phase sequence.
	2 nd day	Relation between phase and line quantities in star & delta connections.
	3 rd day	Power equation in 3-phase balanced circuit.
	4 th day	
	5 th day	

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10 th	1 st day 2 nd day 3 rd day	Solve numerical problems. Measurement of 3-phase power by two wattmeter method. Solve numerical problems.
11 th	1 st day 2 nd day 3 rd day 4 th day	<u>TRANSIENTS:-</u> Steady state & transient state response. Response to R-L, R-C & RLC circuit under DC condition. Solve numerical problems.
12 th	5 th day 1 st day 2 nd day 3 rd day 4 th day 5 th day	<u>TWO-PORT NETWORK:-</u> Open circuit impedance (Z) parameters Short circuit admittance (Y) parameters Transmission (ABCD) parameters Hybrid (h) parameters. Inter relationships of different parameters.
13 th	1 st day 2 nd day 3 rd day 4 th day	Tand T ₁ representation. Solve numerical problems.
14 th	1 st day 2 nd day 3 rd day 4 th day 5 th day	<u>FILTERS:-</u> Define filter. Classification of pass band, stop band and cut-off frequency. Classification of filters. Constant - K low pass filter. Constant - K high pass filter. Constant - K Band pass filter. Constant - K Band elimination filter. Solve numerical problems.