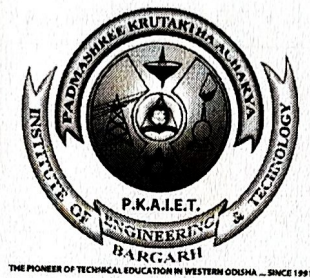


PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



PROGRESS REGISTER Session-2022-2023

Discipline: Electrical Engg.

Semester: 3rd, **A** Subject: CIRCUIT & NETWORK THEORY.

Name of the Teaching Faculty: Bana Bihari Biswal.

Subject: CNT. No. of Days/per week class allotted 4

Semester From Date : 15-09-2022 To Date : 21-01-2023 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
16/09/22	Magnetism magnetic field.	Magnetism. field concept.	magnet, poles field, lines of force.	DGml 16/09/22
19/09/22	Magnetising force, intensity, mmf, flux.	magnetising force, intensity mmf, flux.	H, B, ϕ .	DGml 19/09/22
20/09/22	Permeability, reluctance, permeance.	mmf, flux, reluctance, permeance.	ϕ , S, λ ; μ , μ_0 , μ_r .	DGml 20/09/22
21/09/22	Analogy between magnetic & electric ckt.s.	Analogy.	Similarities Dissimilarities	DGml 21/09/22
23/09/22	B & H Curve.	B-H Curve.	BH curve for hard, soft, ferromagnetic material	DGml 23/09/22
26/09/22	Series & parallel mag. ckt.	Series parallel mag. ckt.	mmf, flux, reluctance in composite ckt	DGml 26/09/22
27/09/22	Self & mutual inductance.	self inductance.	Defn Faraday's law. L.	DGml 27/09/22
28/09/22	Conductively coupled mag. ckt. & mutual inductance.	Mutual inductance coefficient or mag. coupling.	M, k significance of K.	DGml 28/09/22
30/09/22	Dot. Convention	Dot. Convention for mag. coupled ckt.	Dot rule for M & voltage drop	DGml 30/09/22
10/10/22	Series parallel connection for coupled ckt.	combination of coupled inductances	Equivalent inductance for coupled ckt.	DGml 10/10/22
11/10/22	Numerical	Solution to problems.	Problems on L, M, K and KVL eqn.	DGml 11/10/22

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12/10/22	Mesh Analysis.	Circuit element classification	Linear, Non linear, Bilateral, Unilateral Active, Passive elements	<u>Dr. D. S. Reddy</u> 12/10/22
14/10/22	Network element classification	Mesh current Method or analysis.	Mesh equation, procedure.	<u>Dr. D. S. Reddy</u> 14/10/22
17/10/22	Super mesh analysis.	Super mesh method.	Current source adjacent to two meshes.	<u>Dr. D. S. Reddy</u> 17/10/22
18/10/22	Nodal analysis.	Node voltage method	Nodal equation, procedure.	<u>Dr. D. S. Reddy</u> 18/10/22
19/10/22	Super node Analysis.	Super node method.	Definition & equation for super node.	<u>Dr. D. S. Reddy</u> 19/10/22
21/10/22	Source Transformation	Transformation of source.	Conversion of voltage & current sources	<u>Dr. D. S. Reddy</u> 21/10/22
26/10/22	Star delta & delta star transformation	Y A conversion	Derivation of formula.	<u>Dr. D. S. Reddy</u> 26/10/22
28/10/22	Superposition Theorem.	Superposition thm.	Statement, Procedure, application	<u>Dr. D. S. Reddy</u> 28/10/22
31/10/22	Thevenin's Theorem.	Thevenin's thm.	Statement, procedure, application	<u>Dr. D. S. Reddy</u> 31/10/22
01/11/22	Norton's Theorem.	Norton's thm.	Statement, procedure, application.	<u>Dr. D. S. Reddy</u> 01/11/22
02/11/22	Maximum Power Transfer Theorem.	MPT Theorem	Proof & conditions.	<u>Dr. D. S. Reddy</u> 02/11/22

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Semester From Date : 15-09-2022. To Date : 21-01-2023. No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
04/11/22	Numerical	problem on Superposition theorem & Norton's theorem	problem solving on theorem.	DGnd 04/11/22.
07/11/22	AC theory. RL, RC, RLC ckt.	RL, RC, RLC circuits.	Expression for current & impedance.	DGnd 07/11/22.
09/11/22	Series AC circuit.	Problems on series ac ckt.	problems in RL, RC, RLC ckt.	DGnd 09/11/22.
11/11/22	Parallel AC circuit	Problems on parallel ac ckt.	parallel RL, RC, RLC ckt - problem	DGnd 11/11/22.
14/11/22	Power, power factor & power triangle.	Power, pf. power Δ .	types of power.	DGnd 14/11/22.
15/11/22	Active, Reactive Apparent power	Expression thereof.	functions of different power.	DGnd 15/11/22.
18/11/22	Resonance in ac ckt.	Resonance in series & parallel ckt.	Definition of resonance frequency.	DGnd 18/11/22.
21/11/22	Series resonance ckt.	Derivation of formulae.	Band width, selectivity, Q factor.	DGnd 21/11/22.
22/11/22	Poly phase system.	3- ϕ system.	Balanced 3 ϕ system, phase sequence.	DGnd 22/11/22.
23/11/22	Phase & line quantities in Y/ Δ connection	Y & Δ connection	Relation between line & phase quantities.	DGnd 23/11/22.
25/11/22	Power equation (3 ϕ)	Three phase power.	power expression in 3 ϕ ckt.	DGnd 25/11/22.

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Semester From Date : 15-09-2022 To Date : 21-01-2023 No. of Weeks : 15

Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
28/11/22	Power measurement in 3 ϕ system.	Power measurement methods.	Two wattmeter method of power measurement.	D. S. Ml 28/11/22
29/11/22	Numerical.	Power problems.	2-wattmeter method problems.	D. S. Ml 29/11/22
30/11/22	DC Transients	Transient analysis	Defn. steady state & transient state.	D. S. Ml 30/11/22
02/12/22	DC response of RL ckt.	RL ckt. response.	Equation, time constant, voltage transient.	D. S. Ml 02/12/22
05/12/22	Step response of RC ckt.	RC ckt. transients.	eqn, time constant, voltage & current transients.	D. S. Ml 05/12/22
06/12/22	Step response of RLC ckt.	RLC ckt. transients.	eqn, voltage & current transients.	D. S. Ml 06/12/22
07/12/22	Numerical.	Transient problems.	step response problems.	D. S. Ml 07/12/22
09/12/22	Tutorial.	Discussion.	Natural & forced response.	D. S. Ml 09/12/22
12/12/22	Two port Network.	Two port network parameters	ports, TPN parameters	D. S. Ml 12/12/22
13/12/22	z-parameters	z-parameters.	Equation & Definition.	D. S. Ml 13/12/22
14/12/22	y-parameters	y-parameters	Equation & Definition.	D. S. Ml 14/12/22

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
16/12/22	Transmission parameter	ABCP. parameter	Definition. Equation	<u>D. S. Reddy</u> 16/12/22
19/12/22	Hybrid. parameter	h. parameter	Equation definition	<u>D. S. Reddy</u> 19/12/22
20/12/22	Tutorial	Discussion on param.	Z, Y, h, T. parameter	<u>D. S. Reddy</u> 20/12/22
21/12/22	Inter-relationship between parameter	Relation between parameter	Derivation of expressions	<u>D. S. Reddy</u> 21/12/22
23/12/22	Combination of TPNs.	Different connection of TPNs.	cascade, series, parallel.	<u>D. S. Reddy</u> 23/12/22
26/12/22	T & Π representation	T-representation	parameters of T network.	<u>D. S. Reddy</u> 26/12/22
27/12/22	Numerical.	Π -representation	parameter & Π network.	<u>D. S. Reddy</u> 27/12/22
28/12/22	Numerical.	Problem on T & Π network.	Solution to diff. problem	<u>D. S. Reddy</u> 28/12/22
30/12/22	Filter.	Filter.	Definition classification, Bands.	<u>D. S. Reddy</u> 30/12/22
02/01/23	Constant K. Low Pass Filter	LPF.	frequency, band characteristic impedance & attenuation & phase.	<u>D. S. Reddy</u> 02/01/23
03/01/23	Constant K. High Pass Filter	HPF.	Z ₀ , α , β , characteristics	<u>D. S. Reddy</u> 03/01/23

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Date	Topics to be covered as per Lesson Plan	Topics actually covered	Points/contents Discussed (in brief)	Signature of Teacher
04/01/23	Numerical	Problems on LPF & HPF.	Solution to problems.	<u>D. S. Reddy</u> 04/01/23
09/01/23	Tutorial.	Discussion on LPF & HPF.	LPF & HPF	<u>D. S. Reddy</u> 09/01/23
10/01/23	Constant K. Band pass Filter.	BPF.	ω_0, α, β characteristics	<u>D. S. Reddy</u> 10/01/23
11/01/23	Constant K. Band Elimination Filter.	BEF.	ω_0, α, β characteristics	<u>D. S. Reddy</u> 11/01/23
17/01/23	Design of BPF & BEF.	Design of BPF & BEF.	T & π representation	<u>D. S. Reddy</u> 17/01/23
18/01/23	Numerical	Problems on BPF & BEF.	Solution to different problems	<u>D. S. Reddy</u> 18/01/23
20/01/23	Tutorial.	Discussion.	Application of filters.	<u>D. S. Reddy</u> 20/01/23