

Dicipline:	Electrical Engineering	Semester: 3 rd	Name of the Teaching Faculty En. Subhasis Mohanty.	
Subject:	Circuit and Network Theory	No of Days/Week Class Allotted: 5	Semester From date: 1.10.2021 To date 18.1.2022	No. of Weeks:

WEEK	Class Day	Theory Topics
1 st	1st	Magnetic Circuits : introduction to magnetic Circuit.
	2nd	magnetizing force, intensity, mmf, flux and their relations.
	3rd	Permeability, reluctance and permeance.
	4th	Analogy between electric and magnetic circuit.
	5th	B-H Curve.
2 nd	1st	Series and Parallel magnetic circuit.
	2nd	Hysteresis loop
	3rd	Self inductance and mutual inductance. Coupled Circuit:
	4th	Conductively coupled circuit and mutual impedance
	5th	Dot Convention
3 rd	1st	Coefficient of coupling
	2nd	Series and Parallel Connection of coupled inductors
	3rd	Circuit elements and analysis: Active, passive, unilateral, bilateral linear, non-linear
	4th	Mesh Analysis, mesh equation by inspection.
	5th	Super mesh analysis.

WEEK	Class Day	Theory Topics
4 th	1st	Nodal Analysis, Nodal equations by inspection
	2nd	Super node Analysis
	3rd	Source transformation technique. Solve numerical Problem (with independent source)
	4th	Network Theorems: Star to delta and delta to star transformation.
	5th	Super position theorem.
	5 th	1st
2nd		Norton's theorem.
3rd		Maximum Power Transfer theorem.
4th		Solve numerical Problems (with independent sources only)
5th		A.C through R-L, R-C and R-L-C Circuit. A.C circuit and Resonance.
6 th		1st
	2nd	Solution of Problems of A.C through R-L, R-C and R-L-C parallel & composite circuit.
	3rd	Power factor and Power triangle.
	4th	Derive expression for active, reactive and apparent power.
	5th	Derive the resonant frequency of series resonance and parallel resonance circuit.

Subject: <u>Electrical Engineering</u> <u>Circuit and Network Theory</u>	Semester: <u>3rd</u>	Name of the Teaching Faculty <u>ER. KISHORA KUMAR SASMAL</u>	
No of Days/Week Class Allotted: <u>5</u>	Semester From date: <u>1.10.2021</u> To date <u>18.1.2022</u>	No. of Weeks:	

WEEK	Class Day	Theory Topics
7th	1st	Define bandwidth, selectivity and Q-factor in series circuit.
	2nd	Solve the numerical problems.
	3rd	Polyphase Circuit :- Concept of polyphase system and phase sequence.
	4th	Relation between phase and line quantities in Star and delta Connection.
	5th	Power equation in 3-phase balanced circuit.
8th	1st	Solve numerical problems.
	2nd	Measurement of 3- ϕ power by two wattmeter method.
	3rd	Solve numerical problem.
	4th	Transients: Steady state response.
	5th	Transient state response.
9th	1st	Response to R-L circuit under DC condition.
	2nd	Response to R-C circuit under DC condition.
	3rd	Response to R-L-C circuit under DC condition.
	4th	Solve numerical problem.
	5th	Two port network: open circuit impedance (OC) Parameters

WEEK

CLASS DAY

10th

1st

Short circuit admittance (Y) Parameters.

2nd

Transmission (A, B, C, D) Parameters.

3rd

Hybrid (h) Parameters.

4th

Inter relationships of different Parameters.

5th

T and π Representation.

1st

Some numerical Problem.

11th

2nd

Filters:
Define filter, classification filter (passband, stop band and cut off filter)

3rd

Constant -k low pass filter

4th

Constant -k high pass filter.

5th

Constant -k Band pass filter.

1st

Constant -k Band Elimination filter "or" Band Stop filter

12th

2nd

Some numerical Problem.

3rd

4th

5th

