GIETPOLYTECHNIC,JAGATPUR,CUTTACK

LESSONPLAN

DISCIPLINE:- ELECTRICAL ENGINEERING	SEMESTER:- 3rd	NAME OF THE TEACHING FACULTY: SUDIPTA KUMAR DAS
SUBJECT TH:1- ELECTRIC CIRCUITS & NETWORKS	NO. OF DAYS/PER WEEK CLASS ALLOTTED:- 3	SEMESTER FROM DATE:- 14-07-2025 TO DATE :-15 - 11 -2025

Week	Class day	Theory
1st	1st	Network Theorems in DC Circuits 1.1 Node & Mesh Analysis of Electrical Circuits with simple problem.
	2nd	1.2 Thevenin's Theorem, Norton's Theorem, Maximum Power transfer Theorem, Superposition Theorem, Millman Theorem, Reciprocity Theorem-Statement, Explanation & applications
	3rd	1.2 Thevenin's Theorem, Norton's Theorem, Maximum Power transfer Theorem, Superposition Theorem, Millman Theorem, Reciprocity Theorem-Statement, Explanation & applications
2nd	1st	1.3 Simple numerical problems on above
	2nd	1.3 Simple numerical problems on above
	3rd	A. C. Fundamentals & Sinusoidal Steady State Analysis: 2.1 Definitions & explanation of Active & Passive elements.
3rd	1st	2.2 Concept of complex impedance, Rectangular & polar form. Simple problems
	2nd	2.2 Concept of complex impedance, Rectangular & polar form. Simple problems
	3rd	2.3 Idea on Apparent, real, and active power.
4th	1st	2.4 Sinusoidal response of a series R-L, R-C, R-L-C circuit
	2nd	2.4 Sinusoidal response of a series R-L, R-C, R-L-C circuit
	3rd	2.5 Sinusoidal response of a parallel R-L, R-C, R-L-C circuit
5th	1st	2.5 Sinusoidal response of a parallel R-L, R-C, R-L-C circuit
	2nd	Resonance: 3.1 Introduction to resonance circuits & Resonance tuned circuit
	3rd	3.2 Series & Parallel resonance
6th	1st	3.3 Expression for series resonance, Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth in term of Q. Voltage Magnification, Acceptor Circuit.
	2nd	3.3 Expression for series resonance, Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth in term of Q. Voltage Magnification, Acceptor Circuit.
	3rd	3.4 Parallel Resonance Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth of resonant circuit / Tank circuit Current magnification, Rejector Circuit,
7th	1st	3.4 Parallel Resonance Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power, Q Factor and Power Factor of Resonance, Bandwidth of resonant circuit / Tank circuit Current magnification, Rejector Circuit,
	2nd	3.5 Comparisons of Series & Parallel resonance & applications
	3rd	3.6 Simple problems on above Circuits
8th	1st	Passive Filter: 4.1 Idea of Passive & Active Filter, Their relative advantages and disadvantages

	2nd	4.2 Idea of Fourier Series & frequency spectrum. (concept only)
	3rd	4.3 Construction, Principle of operation, Characteristics of Low pass, High pass, Band pass & Band stop filter.
9th	1st	4.3 Construction, Principle of operation, Characteristics of Low pass, High pass, Band pass & Band stop filter.
	2nd	4.4 Design of Low pass filter & High pass filter.
	3rd	4.5 Numerical problems on the above
10th	1st	4.6 Composite filter (concept only).
	2nd	4.6 Composite filter (concept only).
	3rd	Laplace transform and its applications 5.1 Definition & properties of Laplace Transform (LT)
11th	1st	5.2 LT of unit step, impulse, ramp, exponential, sine, cosine, pulse, impulse, Dirac delta function
	2nd	5.2 LT of unit step, impulse, ramp, exponential, sine, cosine, pulse, impulse, Dirac delta function
	3rd	5.3 Explanation of Laplace Transform theorems like Differential, integral, Time displacement, initial value & final value
12th	1st	5.3 Explanation of Laplace Transform theorems like Differential, integral, Time displacement, initial value & final value
	2nd	5.4 Inverse Laplace Transformation. Simple problem
	3rd	5.5 Application of Laplace transformation in circuit theory
13th	1st	Two Port Network: 6.1 Idea on Linear & Non linear networks, Unilateral & Bilateral networks
	2nd	6.1 Idea on Linear & Non linear networks, Unilateral & Bilateral networks
	3rd	6.1 Idea on Linear & Non linear networks, Unilateral & Bilateral networks
14th	1st	6.2 Explanation of Z parameter (Open Circuit Impedance Parameter)
	2nd	6.3 Explanation of Y parameter (Short Circuit Admittance Parameter)
	3rd	6.4 Explanation of h -parameter (Hybrid Parameter)
15th	1st	6.5 Interrelation of above parameters
	2nd	6.6 Inter Connection of Two Port Network
	3rd	6.7 Simple problem on above parameters.

11.7.25
Signature of faculty

11/7/25
Signature of sr. lecturer

11/7/25
Signature of principal