PNS SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

Branch: ETC Engg.	Semester: 3rd	Name of the Lecturer: Chacha Amitav Tripathy		
Subject: ECN	Classes Alloted in a Week: 4	Duration of Semester: 14.07.2025 - 15.11.2025		
Week	Class Day	Theory / Practical Topic		
1st	1	Network Theorems in DC Circuits - Node & Mesh Analysis of Electrical Circuits		
	2	Solve numerical problems		
	3	Thevenin's theorem		
	4	Solve numerical problems		
2nd	1	Norton's theorem		
	2	Solve numerical problems		
	3	Maximum power Transfer Theorem, Solve numerical problems		
	4	Superposition theorem		
3rd	1	Solve numerical problems		
	2	Reciprocity Theorem, Solve numerical problems		
	3	A. C. Fundamentals & Sinusoidal Steady State Analysis - Definitions & explanation of Active & Passive elements		
	4	Solve numerical problems		
4th	1	Idea on Apparent, real, and active power		
	2	Sinusoidal response of a series R-L, R-C, R-L-C circuit		
	3	Sinusoidal response of a parallel R-L, R-C, R-L-C circuit		
	4	Solve numerical problems		
5th	1	Resonance - Introduction to resonance circuits & Resonance tuned circuit, Series & Parallel resonance		
	2	Expression for Series Resonance - Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, Power		
	3	Q Factor and Power Factor of Resonance, Bandwidth in term of Q. Voltage Magnification, Acceptor Circuit		
	4	Expression for Parallel Resonance Condition for Resonance, Frequency of Resonance, Impedance, Current, Voltage, power		
6th	1	Q Factor and Power Factor of Resonance, Bandwidth of resonant circuit / Tank circuit Current magnification, Rejector Circuit		

	2	Comparisons of Series & Parallel resonance & applications
	3	Solve numerical problems
	4	Solve numerical problems
7th	1	Passive Filter - Idea of Passive & Active Filter, Their relative advantages and disadvantages
	2	Idea of Fourier Series & frequency spectrum
	3	Construction, Principle of operation, Characteristics of Low pass filter
	4	Construction, Principle of operation, Characteristics of High pass filter

	1	Construction, Principle of operation, Characteristics of Band pass filter
8th	2	Construction, Principle of operation, Characteristics of Band stop filter
	3	Composite filter
	4	Solve numerical problems
9th	1	Laplace transform and its applications - Definition & properties of Laplace Transform
	2	LT of unit step, impulse, ramp, exponential function
	3	LT of sine, cosine, pulse, impulse, Dirac delta function
	4	Explanation of Laplace Transform theorems like Differential, integral
10th	1	Explanation of Laplace Transform theorems like Time displacement, initial value & final value
	2	Inverse Laplace Transformation
	3	Application of Laplace transformation in circuit theory
	4	Two Port Network - Idea on Linear & Non linear networks, Unilateral & Bilateral networks, Open Circuit Impedance Parameters
11th	1	Two Port Network - Open Circuit Impedance Parameters
	2	Short Circuit Admittance Parameters
	3	Solve numerical problems
	4	Solve numerical problems
12th	1	Hybrid Parameters
	2	Interrelationship of of above parameters
	3	Inter Connection of Two Port Network
	4	Solve numerical problems