ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline:	CE	Semester: 3rd	Name of the Teaching Faculty: Sandhyapriya Barik	
Subject: Engineering Math-III		No of Days/Week Class Allotted: 4	Semester From date: 15.09.2023 To date 12.01.2023	No.of Weeks: 15

WEEK	Class Day	Theory Topics
	1st	Explain need for complex number system Introduce $i = \sqrt{-1}$ Differentiate real & imaginary
	2nd	Define $z = a + ib$ form and explain the geometrical meaning of $z, \bar{z}, \lvert z \rvert$ state
	3rd	State & apply division for z Convert given expression into $a + ib$ form
	4th	State & illustrate properties of $\bar{z}, \lvert z \rvert$
	5th	
	1st	Determine the cube roots of unity 1, ω, ω^2 and state their properties,
	2nd	State and apply De-Moivre's theorem to find z^n
	3rd	Evaluate square root of a complex number i.e $\sqrt{a+ib}$ Discuss Previous Year problem
	4th	Define & illustrate different types of matrices.
	5th	
	1st	Define rank of the matrix. Evaluate Rank using minor method
	2nd	Evaluate Rank of a matrix by using elementary row & column operation.
	3rd	State Rouche's Theorem Apply it to test Consistency of a system of eqn
	4th	Solve a system of equations by backward substitution if it is consis
	5th	

WEEK	Class Day	Theory Topics
	1st	Solve ODEs using $L^{-1}\{F(s)\}$ concept
	2nd	Class Test-1
	3rd	Define periodic function and periodic with examples.
	4th	Convert $f(x)=x$ and $f(x)=x^2$ into Fourier series by using the Euler's
	5th	
	1st	Convert some continuous functions into Fourier series by using the Euler's formula
	2nd	Convert functions with points of discontinuity into Fourier series.
	3rd	Define odd & even functions and state the process of finding their Fourier series
	4th	Solve some more problems in Fourier series.
	5th	
	1st	Discuss previous year questions.
	2nd	State the limitations of analytical Method of solving and explain the procedure.
	3rd	Introduce Iterative Method & state the steps and procedure for Bisection Method
	4th	State the steps and procedure for Newton Raphson's Method.
	5th	

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WEEK	Class Day	Theory Topics
	1st	solve an equation using both the methods & compare the efficiency of methods.
	2nd	Introduce finite difference operators Δ, E, ∇ backward delta and establish
	3rd	Formulate forward & backward table for calculating missing value in data table.
	4th	Define inter polation,
	5th	
	1st	Use forward & backward inter polation formula for finding f(x) at x=a
	2nd	State Lagrange's inter polation formula for unequal intervals.
	3rd	Formulate suitable polynomial for specific data table
	4th	Class Test-2
	5th	
	1st	explain numerical integration and its benefit.
	2nd	use both Trapezoidal rule & simpson's 1/3rd rule on an integral with odd
	3rd	some Previous year problem
	4th	Revision.
	5th	

WEEK	Class Day	Theory Topics
	1st	
	2nd	
	3rd	
	4th	
	5th	
	1st	
	2nd	
	3rd	
	4th	
	5th	
	1st	
	2nd	
	3rd	
	4th	
	5th	