GOVERNMENT POLYTECHNIC, JAJPUR

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From:04/02/2025			To:17/05/2025
SUBJECT- MATH-II		**SEMESTER-2ND**	
NO.OF WEEKS-15		**NAME OF THE TEACHING FACULTY-Smt. Pragyan Priyadarsini**	
		No.of classes alloted per week-04	
week	Period	TOPIC	
1st	1st	**UNIT - I: Determinants and Matrices** :Elementary properties of determinants up to 3rd order	
	2nd	consistency of equations	
	3rd	Crammer's rule	
	4th	Problems and solutions related to cramer's rule	
2nd	5th	Algebra of matrices	
	6th	Inverse of a matrix	
	7th	Problems related to inverse of a matrix	
	8th	matrix inverse method to solve a system of linear equations in 3 variables.	
3rd	9th	Problems related to matrix method	
	10th	class test	
	11th	**UNIT - II: Integral Calculus :** Integration as inverse operation of differentiation	
	12th	Simple integration by substitution method	
4th	13th	Problems and solutions related to substitution method	
	14th	Integration by parts method	
	15th	Problems and solutions related to by parts method	
	16th	integration by using partial fractions (for linear factors only)	
5th	17th	Problems and solutions related to partial fractions	
	18th	Use of formulas of definite integral	
	19th	problems and solutions related to definite integral	
	20th	**Applications of integration :** bounded by a curve and axes. i. Simple problem on evaluation of area	
6Th	21st	ii. Calculation of Volume of a solid formed by revolution of an area about axes.	
	22nd	Doubt clearing	
	23rd	class test	
	24th	**UNIT - III: Co-Ordinate Geometry** standard forms Equation of straight line in various	

7th	25th	Inter section of two straight lines
	26th	Angle between two lines.
	27th	Problems related to inter section of two straight lines, angle between two lines.
	28th	Parallel and perpendicular lines
8th	29th	Problems related to Parallel and perpendicular lines
	30th	Perpendicular distance formula.
	31st	Problems related to Perpendicular distance of a point from a line
	32nd	General equation of a circle and its characteristics
9th	33rd	Equation of a circle, given:Centre and radius
	34th	Problems related to equation of a circle given Centre and radius
	35th	Equation of a circle, given:Three points lying on it
	36th	Problems related to equation of a circle given:Three points lying on it
10th	37th	Equation of a circle, given: Coordinates of end points of a diameter;
	38th	Problems related to equation of a circle
	39th	Definition of conics (Parabola, Ellipse, Hyperbola) their standard equations
	40th	Problems on conics when their foci, directories or vertices are given
11th	41st	doubt clearing
	42nd	class test
	43rd	**UNIT -IV: Vector Algebra:** Introduction of vector and scalar
	44th	Definition notation and rectangular resolution of a vector
12th	45th	Addition and subtraction of vectors.
	46th	Scalar products of 2 vectors
	47th	Problems related to Scalar products of 2 vectors
	48th	vector products of 2 vectors
13th	49th	Problems related to vector products of 2 vectors
	50th	Simple problems related to work, moment and angular velocity.
	51st	Doubt clearing
	52nd	class test
14th	53rd	**UNIT-V: Differential Equations:** Introduction of first order and first degree differential equation
	54th	Solution of first order and first degree differential equation by variable separation method
	55th	Problems related to Solution of first order and first degree differential equation by variable separation method
	56th	MATLAB – Simple Introduction
15th	57th	Simple problems using MATLAB
	58th	Doubt clearing
	59th	class test
	60th	Doubt clearing

Prangyan Priyadarsini

Lecturer in Maths

(Stage - I)