

Discipline: COMMON	Semester: FIRST SEMESTER	Name of the Teaching Faculty: ASISH SHARMA LECTURER IN MATHEMATICS
Subject: ENGG. MATH-I	No. of Days/per week class allotted: (L-05+T-01)DAYS =06 DAYS	Semester From Date: 26/10/2022 To Date:20/02/2023 No. of Weeks: 15 WEEKS
Week	Class Day	Theory Topics
01	01	MATRICES AND DETERMINANTS:- Defining matrices, Finding order of matrices, Types of matrices.
	02	Addition & subtraction of matrices
	03	Multiplication of matrices with constant & Product of two matrices. Solving examples & previous semester question.
	04	Finding minor, Co-factor of matrix & Formation of Ad joint matrices.
	05	Finding determinant of a square matrix of order 2 and 3.
	06	TUTORIAL CLASS
02	07	Finding Inverse matrix of order 2 & 3.
	08	Solving Problems related to above topics.
	09	QUIZ TEST(matrix)
	10	Discussion of Cramer Rule for solving system of linear equations.
	11	Solving problem related to Cramer's Rule.
03	12	TUTORIAL CLASS
	13	Discussions of Matrix Inverse Method for solving a system of Linear Equations.
	14	Solving the question related to system of linear equations.
	15	QUIZ TEST(MATRIX INVERSE & CRAMER'S RULE)
	16	Discussions of Properties of determinants.
	17	Discussions of Properties of determinants (Contd.)
	18	TUTORIAL CLASS
04	19	Finding the determinant of any matrix using properties of determinant.
	20	Solving Problems related to properties of determinant.
	21	CLASS TEST COVERING UNIT-1.
	22	TRIGONOMETRY:- Introduction to T-ratios, Basic Properties of T-ratios,
	23	ASTC Rule & its usage in finding Signs of T-Ratios, trigonometric functions, Trigonometry Identity & problems based upon it.
	24	TUTORIAL CLASS
05	25	Finding maximum & minimum values of T-Ratios, Problems based on it.
	26	Values of T-ratios of allied angles
	27	Values of T-ratios of allied angles (Contd.)
	28	Values of T-ratios of allied angles (Contd.)
	29	Properties of T-Ratios (addition theorem, transformation of product into sum/difference/Vice-versa).

	30	TUTORIAL CLASS
06	31	Compound, Multiple and Sub Multiple Angles & related formulas. Problems based on it
	32	Inverse trigonometric function, Finding the domain & range of various inverse functions.
	33	Self adjusting property, Reciprocal Property.
	34	Conversion property of inverse functions.
	35	Discussion of various theorems involving inverse trigonometric function.
	36	TUTORIAL CLASS
07	37	Discussion of various theorems involving inverse trigonometric function.
	38	Solving previous year questions.
	39	CLASS TEST COVERING TOPICS OF UNIT-2.
	40	CO-ORDINATE GEOMETRY IN 2D:- Concepts of two dimensional geometry, Co-ordinate axes, Co-ordinates of a point & representation in Cartesian Plane.
	41	Distance formula between two points & solving various problems based on distance between points.
	42	TUTORIAL CLASS
08	43	Internal division, Midpoint formula, External division, Centroid of a triangle & problems based on it.
	44	Area of a triangle, Co-linearity of three points, Some Solved Problems
	45	Slope (Gradient) of a line, Slope of a line joining two points P (x_1, y_1) and Q (x_2, y_2),
	46	Conditions of parallelism and perpendicularity, Solving problems based on it
	47	Different forms of equation of a straight line & solving problems
	48	TUTORIAL CLASS
09	49	Angle between two lines
	50	Transformation of general equation in different standard forms
	51	Equation of a line parallel to a given line, Equation of a line perpendicular to a given line
	52	Intersection of two lines, Concurrency, Perpendicular distance
	53	Distance between two parallel lines
	54	TUTORIAL CLASS
10	55	CLASS TEST COVERING TOPICS OF UNIT-3.
	56	CIRCLE :- Definition of a Circle, Equation of circle in standard form.
	57	Equation of circle when the circle passes through the origin, touches X-axis, Y-axis.
	58	Equation of a circle by center radius form
	59	Equation of a circle by end point of diameter form
	60	TUTORIAL CLASS

11	61	General form of equation of circle, Equation of a Circle satisfying certain given conditions
	62	Solving previous semester questions
	63	CLASS TEST COVERING TOPICS OF UNIT-4.
	64	UNIT-5:- Introduction to 3D geometry
	65	Distance formulae & related problems, section formulae
	66	TUTORIAL CLASS
12	67	Direction ratio, direction cosine
	68	Relation between DC'S & DR'S.
	69	Finding DCS&DRS if end points of a line is given.
	70	Finding the angle between two lines.
	71	Condition of parallelism and perpendicularity between two lines.
	72	TUTORIAL CLASS
13	73	Equation of a plane in general form
	74	Angle between two planes
	75	Perpendicular distance of a point from a plane
	76	Perpendicular distance of a point from a plane
	77	Equation of a plane passing through a point and parallel to a plane
	78	TUTORIAL CLASS
14	79	Equation of a plane passing through a point and perpendicular to a plane.
	80	Solution to Previous Year questions.
	81	CLASS TEST COVERING TOPICS OF UNIT-5.
	82	UNIT-6:- Definition of sphere, Properties of sphere
	83	Equation of a sphere by center radius form
	84	TUTORIAL CLASS
15	85	Equation of a sphere by general form
	86	Equation of a sphere by two end points of a diameter form
	87	CLASS TEST COVERING TOPICS OF SPHERE
	88	MOCK SEMESTER EXAM
	89	MOCK SEMESTER EXAM
	90	MOCK SEMESTER EXAM

Handwritten
 23/12/22
 (ASIGH SHARMA)
 LECTURER IN MATH.