



Lesson Plan for Mathematics-II(Th-3)

Discipline	Semester:-2 nd sem All branches	Name of the Teaching Faculty:- Jajatendu Keshari Chand
Subject:- Mathematics	No of days/per week class allotted	Semester from 04/02/2025 to 17/05/2025 No of weeks:- 15
Week	Class	Theory Topics
1 st	1 st	INTRODUCTION TO MATRICES, ORDER OF MATRICES & TYPE OF MATRICES AND OPERATIONS ON MATRICES.
	2 nd	INTRODUCTION TO DETERMINANT AND EXPANSION OF DETERMINANTS. MINORS AND COFACTORS OF MATRICES AND DETERMINANTS.
	3 rd	DISCUSSION ON PROPERTIES OF DETERMINANTS AND SOLVE PROBLEMS ON IT.
	4 th	EXPANSION OF DETERMINANT USING PROPERTIES AND DOUBT CLEARING.
2 nd	1 st	EXPANSION OF DETERMINANT USING PROPERTIES
	2 nd	FIND INVERSE OF MATRIX (2 ND AND 3 RD ORDER)
	3 rd	FIND INVERSE OF MATRIX (2 ND AND 3 RD ORDER)
	4 th	SOLVE SYSTEM OF LINEAR EQUATION BY CRAMER'S RULE.
3 rd	1 st	SOLVE SYSTEM OF LINEAR EQUATION BY CRAMER'S RULE.
	2 nd	DOUBT CLEARING AND PRACTICE PROBLEMS
	3 rd	SOLVE SYSTEM OF LINEAR EQUATION BY MATRIX METHOD
	4 th	SOLVE SYSTEM OF LINEAR EQUATION BY MATRIX METHOD
4 th	1 st	DISCUSSION OF PROBLEMS ON DETERMINANT AND MATRIX AND DOUBT CLEARING.
	2 nd	CLASS TEST ON THIS TOPIC.
	3 rd	DEFINE INTEGRATION OF FUNCTION AS REVERSE PROCESS OF DIFFERENTIATION. STATE INTEGRATION

		FORMULAS OF SOME STANDARD FUNCTIONS.
	4 th	SOLVING INTEGRATION OF FUNCTIONS USING DIRECT FORMULAS. SUBSTITUTION METHOD.
5 th	1 st	SOLVE PROBLEMS ON SUBSTITUTION METHOD
	2 nd	DEFINE INTEGRATION BY PARTS RULE EXPLANATION WITH EXAMPLES
	3 rd	INTEGRATION BY PARTS RULE AND SOLVE PROBLEMS BY THIS RULE.
	4 th	SOLVING PROBLEMS OF INTEGRATION USING BY PARTS AND METHOD OF PARTIAL FRACTION
6 th	1 st	SOLVING INTEGRATION PROBLEMS USING PARTIAL FRACTION METHOD.
	2 nd	INTRODUCE DEFINITE INTEGRAL AND STATE PROPERTIES OF DEFINITE INTEGRAL,
	3 rd	SOLVING PROBLEMS OF PROBLEMS ON DEFINITE INTEGRAL.
	4 th	SOLVING PROBLEMS OF PROBLEMS ON DEFINITE INTEGRAL. STATE WALLI'S FORMULA AND SOLVE PROBLEM ON IT.
7 th	1 st	APPLYING DEFINITE INTEGRAL CONCEPT TO FIND AREA BOUNDED BY A CURVE AND AXES.
	2 nd	APPLYING DEFINITE INTEGRAL CONCEPT TO FIND VOLUME OF A SOLID FORMED BY REVOLUTION OF AN AREA ABOUT AXES.
	3 rd	DISCUSSION OF PROBLEMS ON INTEGRATION AND DOUBT CLEARING.
	4 th	CLASS TEST ON THIS TOPIC.
8 th	1 st	INTRODUCTION OF GEOMETRY IN TWO DIMENSION. DEFINE POINTS AND QUADRANTS IN 2-D PLANE . STATE DISTANCE FORMULA.
	2 nd	STATE SECTION FORMULAE, AREA OF A TRIANGLE AND CONDITION OF COLLINEARITY. SOLVING PROBLEMS ON THESE TOPICS.
	3 rd	STATE ANGLE OF INCLINATION OF A LINE, SLOPE OF A LINE AND CONDITION OF PARALLELISM AND PERPENDICULARITY . SOLVING PROBLEMS ON THEM.
	4 th	DEFINE LOCUS, EQUATION OF LOCUS , INTERCEPTS AND EQUATION OF LINE FOR DIFFERENT SET OF DATA. SOLVING PROBLEM ON THESE TOPICS.
9 th	1 st	STATE GENERAL EQUATION OF LINE AND DETERMINE SLOPE, INTERCEPTS FROM IT. CONDITION OF PARALLELISM AND PERPENDICULARITY FROM GENERAL EQUATION OF LINE. PROBLEMS ON IT.
	2 nd	STATE RELATIONSHIP BETWEEN PARALLEL AND PERPENDICULAR LINES. DETERMINE EQUATION OF A

		LINE PARALLEL AND PERPENDICULAR TO A LINE PASSING THROUGH A POINT. STATE INTERSECTION OF TWO LINES
	3 rd	SOLVING PROBLEMS OF EQUATION OF A LINE PASSING THROUGH INTERSECTION OF TWO LINES AND i) PASSING THROUGH A POINT. ii) PARALLEL TO ANOTHER LINE iii) PERPENDICULAR TO ANOTHER LINE.
	4 th	STATE FORMULA FOR PERPENDICULAR DISTANCE OF A POINT FROM A LINE AND DISTANCE BETWEEN TWO PARALLEL LINES. DETERMINE OF FOOT OF PERPENDICULAR FROM A POINT TO A LINE.
10 th	1 st	DISCUSSION OF PROBLEMS ON THIS TOPIC.
	2 nd	INTRODUCE CIRCLE, EQUATION OF A CIRCLE WITH GIVEN CENTRE AND RADIUS. SOLVING PROBLEMS BASED ON DEFINITION.
	3 rd	DETERMINE EQUATION OF CIRCLE WHEN END POINTS OF THE DIAMETER IS GIVEN. STATE GENERAL EQUATION OF CIRCLE AND DETERMINE CENTRE AND RADIUS FROM GENERAL EQUATION OF CIRCLE.
	4 th	SOLVE EQUATION OF CIRCLE PASSING THROUGH 3 POINTS AND EQUATION OF CIRCLE PASSING THROUGH TWO POINTS AND CENTRE LIES ON A GIVEN LINE.
11 th	1 st	SOLVE EQUATION OF CIRCLE PASSING THROUGH 3 POINTS AND EQUATION OF CIRCLE PASSING THROUGH TWO POINTS AND CENTRE LIES ON A GIVEN LINE.
	2 nd	INTRODUCE CONIC SECTION. STATE GENERAL EQUATION OF PARABOLA, ELLIPSE AND HYPERBOLA.
	3 rd	SOLVING PROBLEMS ON DIRECTRIX AND FOCUS OF CONIC SECTIONS.
	4 th	SOLVING PROBLEMS ON DIRECTRIX AND FOCUS OF CONIC SECTIONS. REVISION OF COORDINATE GEOMETRY. DOUBT CLEARING.
12 th	1 st	CLASS TEST ON THIS TOPIC.
	2 nd	INTRODUCTION TO VECTOR AND TYPES OF VECTOR
	3 rd	REPRESENTATION OF A VECTOR, MAGNITUDE AND DIRECTION OF A VECTOR, OPERATIONS ON VECTOR AND POSITION VECTOR.
	4 th	RESOLUTION OF VECTOR IN 2D AND 3D. OPERATIONS ON VECTORS IN COMPONENT FORM. UNIT VECTOR IN THE DIRECTION OF VECTOR. PROBLEMS ON DISCUSSED TOPICS.
13 th	1 st	FIND ANGLE BETWEEN THE VECTORS. DEFINE DOT PRODUCT OF TWO VECTORS. STATE GEOMETRICAL MEANING OF DOT PRODUCT AND PROPERTIES OF DOT PRODUCT. FIND ANGLE BETWEEN TWO NON ZERO VECTORS.

	2 nd	SOLVING PROBLEMS ON DOT PRODUCT. DISCUSSION OF SIMPLE PROBLEMS ON WORK DONE BY A FORCE.
	3 rd	STATE VECTOR PRODUCT AND GEOMETRICAL MEANING OF VECTOR PRODUCT. APPLY CROSS PRODUCT TO SOLVE PROBLEMS ON MOMENT AND ANGULAR VELOCITY.
	4 th	STATE CONDITION OF COPLANARITY AND MISCELLANEOUS PROBLEMS ON VECTOR. FIND AREA OF TRIANGLE AND PARALLELOGRAM USING VECTOR PRODUCT.
14 th	1 st	CLASS TEST ON THIS TOPIC.
	2 nd	DEFINE DIFFERENTIAL EQUATION. STATE ORDER AND DEGREE OF ODE. STATE LINEAR DIFFERENTIAL EQUATION.
	3 rd	SOLVE DIFFERENTIAL EQUATION BY VARIABLE SEPARABLE METHOD.
	4 th	SOLVE DIFFERENTIAL EQUATION BY VARIABLE SEPARABLE METHOD.
15 th	1 st	DISCUSSION OF PROBLEMS AND DOUBT CLEARING.
	2 nd	CLASS TEST ON THIS TOPIC.
	3 rd	SIMPLE INTRODUCTION TO MATLAB.
	4 th	DISCUSSION OF IMPORTANT PROBLEMS AND DOUBT CLEARING.

Jayatendra Keshari Chand.

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