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CLASS XII

SUBJECT – MATHEMATICS

SYLLABUS 2025-26

DISTRIBUTION OF SYLLABUS AS PER EXAMS

Exam Name	Chapters
Assessment 1	➢ Chapter 3: Matrices ➢ Chapter 4: Determinants
Half Yearly	➢ Chapter 1: Relation and Functions ➢ Chapter 2: Inverse Trigonometric Functions ➢ Chapter 3: Matrices ➢ Chapter 4: Determinants ➢ Chapter 5: Continuity and Differentiability ➢ Chapter 6: Application of Derivatives ➢ Chapter 7: Integrals
Common Pre-Board	➢ Chapter 1: Relation and Functions ➢ Chapter 2: Inverse Trigonometric Functions ➢ Chapter 3: Matrices ➢ Chapter 4: Determinants ➢ Chapter 5: Continuity and Differentiability ➢ Chapter 6: Application of Derivatives ➢ Chapter 7: Integrals ➢ Chapter 8: Application of Integrals ➢ Chapter 9: Differential Equations ➢ Chapter 10: Vector Algebra ➢ Chapter 11: Three Dimensional Geometry ➢ Chapter 12: Linear Programming ➢ Chapter 13: Probability

S. NO.	CHAPTER	LEARNING OUTCOMES	SKILL DEVELOPED	TEACHING METHODOLOGY/ ACTIVITY
1.	Relations and Functions	• To determine if a relation is an equivalence by verifying reflexivity,	• Identifying equivalence relations by verifying reflexivity,	Concept Mapping using Van diagram, Lecture method, Demonstration,

		symmetry, and transitivity. • To identify one-to-one and onto functions.	symmetry, and transitivity. • Recognizing one-to-one and onto functions.	and Practice Worksheets
2.	Inverse Trigonometric Functions	• To identify the domain, range, and principal value branch of inverse trigonometric functions. • To understand and draw graphs of inverse trigonometric functions.	• Identifying the domain, range, and principal value branch of inverse trigonometric functions. • Understanding and sketching graphs of inverse trigonometric functions	Graphical Demonstration (Use graphing software to visualize inverse trigonometric functions.), and practice worksheets
3.	Matrices	• To identify different types of matrices. • To perform operations on matrices. • To find the transpose of a matrix. • To understand symmetric and skew symmetric matrices. • To add two matrices. • To express a matrix as the sum of symmetric and skew symmetric matrices.	• Recognizing different types of matrices. • Performing matrix operations efficiently. • Finding the transpose of a matrix. • Understanding symmetric and skew symmetric matrices. • Expressing a matrix as the sum of symmetric and skew symmetric matrices.	Daily-life Examples, Lecture Method, Demonstration, and Practice Worksheets
4.	Determinants	• To find the area of a triangle using determinants. • To understand minors and cofactors. • To compute the adjoint and inverse of a matrix. • To apply determinants and matrices in problem-solving.	• Finding the area of a triangle using determinants. • Computing the inverse of a matrix. • Solving systems of equations using matrices.	Hands-on Demonstrations, Step-by-step Explanation, Practice Sheets

5.	Continuity and Differentiability	• To identify points of discontinuity of functions. • To identify points of non-differentiability of functions. • To find derivatives of exponential and logarithmic functions. • To find derivatives of functions in parametric form and second order derivative.	• Identifying points of discontinuity in functions. • Recognizing points of non-differentiability. • Differentiating exponential and logarithmic functions. • Finding derivatives of parametric functions and second order derivative.	Graphical Approach, Comparative Study (Compare differentiability with continuity through examples), Concept Reinforcement, Practice Exercises, Error Analysis
6.	Applications of Derivatives	• To find the rate of change of a dependent variable due to changes in an independent variable. • To identify increasing and decreasing functions. • To determine maxima and minima of a function using first derivative test and second derivative test.	• Understanding the rate of change in dependent variables. • Identifying increasing and decreasing functions. • Finding maxima and minima of functions.	Visual Representations (Use graphs to explain derivative applications), Real Life Examples Using Audio-Video Session, Practice Worksheets
7	Integrals	• To understand integration as an inverse process of differentiation. • To learn methods of integration. • To integrate special functions. • To apply the method of partial fractions and integration by parts. • To evaluate definite integrals using substitution and properties.	• Understanding integration as the inverse of differentiation. • Applying different methods of integration. • Solving definite integrals using substitution and properties.	Reverse Engineering, Lecture Method, Demonstration, and Practice Worksheets

8.	Applications of Integrals	• To understand the geometric meaning of integration. • To find the area under simple curves especially lines, circles/ parabolas/ellipses (in standard form only).	• Applying integration to calculate areas under curves. • Finding the area enclosed between curve and a line.	Graphical Representation, Lecture method, Demonstration, and Worksheet-based Learning.
9.	Differential Equations	• To identify the degree and order of a differential equation. • To form a differential equation when a solution is given. • To solve differential equations using the variable separable method, homogeneous method, and linear differential equation method.	• Identifying the degree and order of differential equations. • Forming differential equations from given solutions. • Solving differential equations using different methods.	Stepwise Approach, Hands-on Problem Solving, and Practice Worksheets.
10.	Vector Algebra	• To understand the introduction and types of vectors. • To perform addition of vectors and multiplication by a scalar. • To find the dot product and cross product of two vectors. • To determine the projection of one vector on another. • To analyze vectors when the dot product or cross product is zero.	• Understanding vector operations, including addition and scalar multiplication. • Computing dot and cross products. • Determining vector projections. • Analyzing vector relationships.	3D Visualization, Lecture Method, Demonstration, and Practice Worksheets
11.	Three Dimensional Geometry	• To find the equation of a line in space in Cartesian and vector forms. • To compute the angle between two	• Understanding direction cosines and ratios of a line. • Determining equations of lines in space.	Graphical Demonstration, Lecture Method, Demonstration, and Practice Worksheets

		lines using direction cosines. • To find the shortest distance between two lines.	• Finding angles between lines. • Computing distances between point and a line.	
12.	Linear Programming	• Understanding the problem and its mathematical solution (graphically). • Understanding related terminology such as constraints, objective function, and optimization. • Solving problems using the graphical method in two variables, including feasible and unfeasible regions with up to three non-trivial constraints.	• Solving problems mathematically (graphically). • Understanding constraints and objective functions. • Solving optimization problems graphically.	Graphical Interpretation, Lecture method, Demonstration, and Practice Worksheets
13.	Probability	• To find probability using the conditional probability formula. • To identify and solve problems using Bayes' theorem. • To determine the probability distribution of different random variables and mean of random variable.	• Applying conditional probability formula. • Using Bayes' theorem to solve real-world problems. • Understanding probability distributions of random variables and mean of random variable.	Real-life Examples , Step-by-step Approach, Application-based Learning, and Practice Worksheets

Prescribed Books:

1. *Mathematics Part I - Textbook for Class XII, NCERT Publication*
2. *Mathematics Part II - Textbook for Class XII, NCERT Publication*
3. *Mathematics Exemplar Problem for Class XII, Published by NCERT*
4. *Mathematics Lab Manual class XII, published by NCERT*