MATHEMATICS (SESSION 2020-21), CLASS- XII

MONTH: MARCH

Content/Topic	1st-2rd Week	3rd Week	4th Week
Chapter 3: Matrices		➢ Familiarization with the course and marking scheme ➢ Concept, notation, order, equality, types of matrices ➢ Addition/Subtraction & Scalar multiplication of matrices ➢ Multiplication of Matrices ➢ Transpose of a matrix, Meaning & Properties of Symmetric & Skew-Symmetric Matrix	➢ Concept of Elementary Row & Column Operations ➢ Concept of Minors & Cofactor, Properties of Cofactors
Learning Objectives	➢ To enable the students to - ➢ define a Matrix ➢ classify Matrix		
Learning Outcomes	➢ Students would be able to ➢ define a Matrix ➢ classify Matrix		
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual		
Teaching Aids/Resources	➢ NCERT Text book, Smart Class Module		

MONTH: APRIL

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 3: Matrices(contd.) **Chapter 4 :** Determinants **Chapter 1 :** Relations & Functions	➢ Adjoint of a Matrix ➢ Inverse of a Matrix	➢ Application of Matrices ➢ Matrix method	➢ Properties of Determinants ➢ Application of determinants	➢ Types of relations: Reflexive, symmetric, transitive and equivalence relations ➢ One-One and Onto functions	➢ Composite functions ➢ Inverse of a function.
Learning Objective	➢ critically analyse & evaluate the inverse of matrix ➢ evaluate a determinants using Properties ➢ define & recognize different types of Relations & functions				

Expected Learning Outcome	Students would be able to ➢ critically analyse & evaluate the inverse of matrix ➢ apply their knowledge to evaluate a determinants using Properties ➢ define & recognize different types of Relations & functions ➢ understand the definition of a Binary Operation & its Commutativity & Associativity	
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual	
Teaching Aids /Resources	➢ NCERT Text book, Smart Class Module	

MONTH: MAY

Content/Topic	1st week	2nd Week	3rd Week	4th Week	5th Week
Chapter 2: Inverse Trigonometric Functions **Chapter 5:** Differentiation	➢ Definition, range, domain,	UT-1 ➢ principal value branches of inverse trigonometric functions ➢ Graphs of inverse trigonometric functions ➢ Elementary properties of inverse trigonometric functions.	UT-1 ➢ Continuity of a Function at a point ➢ Differentiability of a Function at a point ➢ Derivative of composite functions, chain rule, ➢ Derivatives of inverse trigonometric functions	➢ ➢ Derivative of implicit functions ➢ Derivatives of logarithmic & exponential functions Logarithmic differentiation ➢ Derivative of functions expressed in parametric forms.	➢ Second order derivatives ➢ Rolle's and Lagrange's Mean Value Theorems and their geometric interpretation
Learning Objective	To enable the students to - ➢ remember & understand the Principal value branches of inverse trigonometric functions ➢ apply their knowledge to use Elementary properties of inverse trigonometric functions critically analyse & evaluate the Continuity & Differentiability of a function at a point				
Expected Learning Outcome	Students would be able to ➢ understand the definition of a Binary Operation & its Commutativity & Associativity ➢ remember & understand the Principal value branches of inverse trigonometric functions ➢ apply their knowledge to use Elementary properties of inverse trigonometricfunctions critically analyse & evaluate the Continuity & Differentiability of a function at a point				
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual				
Teaching Aids /Resources	➢ NCERT Text book, Smart Class Module				

MONTH: JULY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 6: Application of Derivatives **Chapter 7 : Integration**	➢ Rate of change of Bodies/Quantities ➢ Increasing/decreasing ➢ Functions ➢ Use of derivatives in approximation	➢ Tangents and Normals ➢ Concept of Maxima & Minima ➢ Application of Maxima & Minima ➢ Concept of Integration	➢ Integration of the Polynomial Functions ➢ Integration of a variety of functions by substitution ➢ Integration of the Trigonometric Functions	➢ Integration on the basis of Standard Formulas ➢ Integration by ➢ Partial Fractions	➢ Integration by Parts ➢ Definite integrals as a limit of a sum ➢ Fundamental Theorem of Calculus & its application
Learning Objective	To enable the students to - ➢ execute the Knowledge for the Applications of Derivatives ➢ relate the concept of Differentiation with concept of Integration ➢ critically analyse & evaluate the Integration of Different functions				
Expected Learning Outcome	Students would be able to – ➢ execute their Knowledge for the Applications of Derivatives ➢ relate the concept of Differentiation with concept of Integration ➢ critically analyse & evaluate the Integration of Different functions				
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual				
Teaching Aids /Resources	➢ NCERT Text book, Smart Class Module				

MONTH: AUGUST

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
Chapter 7: Integration (contd...) **Chapter 8 :** Application of Integrals **Chapter 9 :** Differential Equations		PT 2 ➢ Applications in finding the area under simple curves especially lines, circles / parabolas /ellipses (in standard form only) ➢ Area between the two above said curves	PT 2 ➢ Definition, order and degree of a Differential Equation	➢ Meaning of General and particular solutions of a differential equation, ➢ Formation of differential equation whose general ➢ solution is given	➢ Solution of a Differential Equation by separating the variables ➢ Solution of a Homogeneous Differential Equation ➢ Solution of a Linear Differential Equation & an Irreducible Differential Equation
Learning Objective	To enable the students to – ➢ describe various methods of integration ➢ understand the Geometrical Interpretation of Definite Integrals ➢ memorize & critically analyse various of Properties of Definite Integrals ➢ relate their knowledge & understanding with the applications of integrals ➢ define the differential equation ➢ formulate the differential equation of an equation ➢ use analytical methods to find the solution of a given differential equation				
Expected Learning Outcome	Students would be able to ➢ describe various methods of integration ➢ understand the Geometrical Interpretation of Definite Integrals ➢ memorize & critically analyse various of Properties of Definite Integrals ➢ relate their knowledge & understanding with the applications of integrals ➢ define the differential equation ➢ formulate the differential equation of an equation ➢ use analytical methods to find the solution of a given differential equation				
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual				
Teaching Aids /Resources	➢ NCERT Text book, Smart Class Module				

MONTH: SEPTEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th week	5th Week
Chapter 10 : Vectors (continued) Chapter 11 : Three Dimensional Geometry Chapter 12: Linear Programming Problem	➢ Vectors and scalars, magnitude and direction of a vector, ➢ Types of vectors, ➢ D.R. &D.C's of a vector ➢ Components of a vector, addition of vectors, multiplication of a vector by a scalar, ➢ Position vector of a point dividing a line segment in a given ratio ➢ Scalar (dot) product of Vectors	➢ Vector (cross) product of vectors ➢ Scalar triple product of vectors ➢ Scalar triple product ➢ Direction cosines and direction ratios of a line joining two points ➢ Cartesian and vector equation of a line	➢ Angle between two lines Coplanar and Skew lines, shortest distance between two lines ➢ Cartesian and vector equation of a plane ➢ Angle between - two planes - a line and a plane.	➢ Distance of a point from a plane Different types of L.P. problems ➢ Mathematical formulation of L.P.P.	➢ Graphical method of solution for problems in two variables, feasible and infeasible regions/solutions
Learning Objective	To enable the students to - ➢ compare and contrast scalars & vectors ➢ classify the vectors & its properties ➢ understand the concept of product of two vectors and its properties ➢ understand & relate the properties of a vectors ➢ visualize the different conditions of a line in three dimensional geometry analyse & illustrate different conditions for a plane & a line				
Expected Learning Outcome	Students would be able to - ➢ use analytical methods to find the solution of a given differential equation ➢ compare and contrast scalars & vectors and classify the vectors ➢ describe the Properties of product of two vectors ➢ understand & relate properties of a vectors ➢ visualize the different conditions of a line in three dimensional geometry analyse & illustrate different conditions for a plane & a line				
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual				
Teaching Aids /Resources	➢ NCERT Text book, Smart Class Module				

MONTH: OCTOBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
	REVISION	**PRE-BOARD-I**	**PRE-BOARD-I**	**PRE-BOARD-I**	Discussion of PB-1 Q paper

MONTH: NOVEMBER

Content/Topic	1st Week	2nd Week	3rd week	4thWeek	5th Week
Chapter 13: Probability	➢ Conditional Probability	➢ Conditional Probability (continue..) ➢ Multiplication theorem on probability	➢ Independent Events ➢ Total Probability ➢ Baye's theorem	➢ Random variable and its probability distribution ➢ Mean and variance of random variable	➢ Discussion of sample paper
Learning Objective	To enable the students to - ➢ evaluate the conditional probability of various events ➢ identify the various approaches of probabilities ➢ solve problems on various approaches of probabilities				
Expected Learning Outcome	Students would be able to - ➢ evaluate the conditional probability of various events ➢ identify the various approaches of probabilities ➢ solve problems on various approaches of probabilities				
Assessment/ Activity	➢ Class and Home Assignment ➢ By Detailed Questioning from the Students in Class room Teaching ➢ Activity from NCERT Maths Lab manual				
Teaching Aids /Resources	➢ NCERT Text book, Smart Class Module				

MONTH: DECEMBER

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
	Practice of Sample paper	Practice of Sample paper	Practice of Sample paper	**COMMON PRE-BOARD**	**COMMON PRE-BOARD**

MONTH: JANUARY

Content/Topic	1st Week	2nd Week	3rd Week	4th Week	5th Week
	COMMON PRE-BOARD	COMMON PRE-BOARD	Practice of Sample paper	Practice of Sample paper	Practice of Sample paper

MONTH: FEBRUARY

Content/Topic	1st Week	2nd Week	3rd Week	4th & 5th Week

Revision	Revision of sample Papers and practice test	Practice tests and clearing the doubts & queries.	Practice tests and clearing the doubts & queries.	➢ Preparation for the Board exam.
Learning Objectives	➢ Clearing their doubts.			
Learning Outcomes	➢ Students would be thorough with the revised topics.			
Assessment/ Activity	➢ Practice tests.			
Teaching Aids /Resources	➢ Sample papers.			