

ACADEMIC PLANNER (APPLIED MATHEMATICS-XII, 2026-27)

Month(WD)	Content	Assignment/ H.W	Practical/ Project work/ Activity	Learning outcomes
April 1-15 (11)	UNIT - 2 ALGEBRA Matrices and Types of Matrices Equality of matrices, Transpose of a matrix, Symmetric and Skew symmetric matrix, Algebra of Matrices Determinants	Exercises of Chapter from CBSE Book/M.L Bhargava	Class tests, homework assignments, problem-solving sessions	<ul style="list-style-type: none"> • Defines matrix • Identifies different types of matrices • Determines equality of two matrices • Defines symmetric and skew symmetric matrix • Performs operations on Matrices • Finds determinant of a square matrix
April 16-30 (13)	UNIT - 2 ALGEBRA Inverse of a Matrix, Solving system of simultaneous equations using matrix method and Cramer's rule	Exercises of Chapter from CBSE Book/M.L Bhargava	Matrix multiplication and the inverse of a matrix using Spreadsheet	<ul style="list-style-type: none"> • Defines the inverse of a square matrix • Apply properties of inverse of matrices • Solves the system of simultaneous equations using i) Cramer's Rule ii) Inverse of coefficient matrix
	UNIT-1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS Modulo Arithmetic, Congruence Modulo	Exercises of Chapter from CBSE Book/M.L Bhargava		<ul style="list-style-type: none"> • Applies arithmetic operations using modular arithmetic rules • Defines congruence modulo • Applies the definition in various problems
May 1-15 (6) 16-25 (8)	UNIT-1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS Alligation and Mixture Numerical Problems: Boats and Streams (upstream and downstream)	Exercises of Chapter from CBSE Book/M.L Bhargava	Project on any one topic from the List of Projects suggested by CBSE - HHW	<ul style="list-style-type: none"> • Understands the rule of alligation to produce a mixture at a given price • Apply rule of allegation • Distinguish between upstream and downstream
July 1-15 (12) 16-31 (14)	UNIT-1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS Numerical Problems: Pipes and Cisterns Races and Games, Numerical Inequalities	Exercises of Chapter from CBSE Book/M.L Bhargava	Class tests, assignments	<ul style="list-style-type: none"> • Determine the time taken by two or more pipes to fill or empty the tank • Compare the performance of two players w.r.t. time, distance
	UNIT - 3 CALCULUS Higher Order Derivatives, Application of Derivatives, Marginal Cost and Marginal Revenue using derivatives Increasing /Decreasing Functions, Maxima and Minima	Exercises of Chapter from CBSE Book/M.L Bhargava	Plot the graphs of functions on excel and study the graph to find out the point of maxima/minima	<ul style="list-style-type: none"> • Determines derivatives up to second order • Determines the rate of change of various quantities • Finds marginal cost and marginal revenue • Solves applied problems related to optimization of cost, revenue and profit only.

August 1-15 (10)	UNIT- 3 CALCULUS Integration and its Applications Integration, Indefinite Integrals as family of curves	Exercises of Chapter from CBSE Book/M.L Bhargava	Class tests, assignments	<ul style="list-style-type: none"> • Understands and determines indefinite integral as anti-derivative • Evaluates indefinite integrals by different methods • Understands fundamental theorem of Integral calculus and evaluates the definite integral • Applies the definite integral to find consumer & producer surplus
16-31 (11)	UNIT- 3 CALCULUS Definite Integrals as area under the curve Application of Integration			
	Differential Equations Differential Equations, Formation and Solution of differential Equations	Exercises of Chapter from CBSE Book/M.L Bhargava	Class tests, homework, problem solving.	<ul style="list-style-type: none"> • Recognizes a differential equation • Formulates and solves differential equation
September 1-15(11)	UNIT - 8 LINEAR PROGRAMMING Introduction and related terminology, Mathematical formulation of Linear Programming Problem, Different types of Linear Programming Problems Graphical method of solution for problems in two variables Feasible and Infeasible Regions, Feasible and Infeasible solutions, optimal feasible solution	Exercises of Chapter from CBSE Book/M.L Bhargava	Class tests, homework worksheets	<ul style="list-style-type: none"> • Formulates Linear Programming Problem upto 3 non-trivial constraints • Draws the Graph for a system of linear inequalities involving two variables and to find its solution graphically
16-30 (12)	HALF YEARLY EXAMINATIONS			
October 1-15 (10)	UNIT- 4 PROBABILITY DISTRIBUTIONS Probability Distribution, Mathematical Expectation Variance UNIT- 4 PROBABILITY DISTRIBUTIONS Binomial Distribution, Poison Distribution, Normal Distribution	Exercises of Chapter from CBSE Book/M.L Bhargava	Class tests, assignments, practical problems	<ul style="list-style-type: none"> • Understands the concept of Random Variables and its Probability Distributions • Finds probability distribution of discrete random variable • Applies binomial, Poisson, and normal distributions to solve problems • Calculates mathematical expectation and variance for discrete random variables.

16-31 (11)	UNIT – 6 TIME BASED DATA Time Series, Components of Time Series, Time Series analysis for univariate data Secular Trend, Methods of Measuring trend	Exercises of Chapter from CBSE Book/M.L Bhargava	Collect data from newspapers on traffic, sports activities and market trends and use excel to study future trends	<ul style="list-style-type: none"> • Defines time series and identifies its components (trend, seasonality, etc.) • Demonstrates the techniques of finding trend by different methods
November 1-15 (9)	UNIT - 5 INFERENTIAL STATISTICS Population and Sample, Parameter and Statistics and Statistical Interferences t-Test (one sample t-test)	Exercises of Chapter from CBSE Book/M.L Bhargava	Collect the data on weather, price, inflation, and pollution analyze the data and make meaningful inferences	<ul style="list-style-type: none"> • Understands the concepts of population, sample, parameter, and statistic; • Explains the importance of sampling distribution.
16-30 (12)	UNIT - 7 FINANCIAL MATHEMATICS Perpetuity, Sinking Funds, Valuation of Bonds, Calculation of EMI Calculation of Returns, Compound Annual Growth Rate, Linear method of Depreciation, Valuation of Bonds	Exercises of Chapter from CBSE Book/M.L Bhargava	Stock Market data sheet on excel	<ul style="list-style-type: none"> • Understands the concepts of perpetuity and sinking funds; Calculate related financial values. • Calculates EMI, returns, rates of return; Apply depreciation methods. • Defines the concept of valuation of bond and related terms. • Calculates value of bond using present value approach
December 1-15 (12) 16-31 (13)	Pre-Board Examination			

TERMWISE SYLLABUS	
UT 1 (July)	UNIT-1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS, UNIT-2 ALGEBRA
Half Yearly/ Term 1 (September)	UNIT- 1, 2, 3,8 (NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS, ALGEBRA, CALCULUS, LINEAR PROGRAMMING)
Pre-Board (December)	Complete Syllabus