Class: XI
Subject: MATHEMATICS

NO. OF PERIOD	TOPIC	SUB-TOPIC	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT / ACTIVITIES	LEARNING OUTCOMES
10	Sets	Representation, Empty Set, Finite and Infinite Set, Equal Sets, subsets, Power Sets, Universal sets, Venn Diagram, operations on sets, Complement of a set, Practical problems on union and Intersection of two sets	Concept of sets and apply them to problems, problem pictorially using venn diagrams.	Practice sheet	To apply the concept to problems. To describe a problem pictorially using venn diagrams.
10	Relations and Functions	Cartesian Product , Relation, Function	To understand relation and functions., To identify domain and codomain of functions	Practice sheet	To find domain and codomain of functions
7	Principle of Mathematical Induction	Introduction, Need, The principle	New method of proofs	Practice sheet	To understand the new method of proving.
20	Trigonometric Functions	Introduction, Angles, Trigonometric functions, Trigonometric functions of sum and difference of two angles, Trigonometric equations	Radian and degree measure of angles, identities in solving problems	Practice sheet	To solve problems on radian and degree measure of angles, To able to use identities in solving problems

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15	Complex Numbers and Quadratic Equations	Introduction, Complex Numbers, Algebra of Complex Numbers, The modulus, Conjugate of a complex number, Argand Plane , Polar representation, Quadratic Equations	Need of complex numbers, use of complex numbers, modulus and argument of complex numbers.	Practice sheet	To solve problems on complex numbers
10	Linear Inequalities	Introduction, Linear Inequalities, Graphical solution, One variable, Two Variables	Graphical solutions to system of equations	Practice sheet	To find graphical solutions to system of equations
20	Permutations and Combinations	Fundamental principle of counting, combination, Permutation	Number of ways in which a particular combination or arrangement can be done.	Practice sheet	To find the number of ways in which a particular combination or arrangement can be done.
15	Binomial Theorem	For positive Integral Indices, General term, Middle terms	Eexpansion of binomial, general and middle terms.	Practice sheet	To find expansion of binomial, general and middle terms.
15	Sequence and Series	Sequences, series, Arithmetic progression (A. P), Geometric Progression (G.P), Relation between Arithmetic mean and geometric mean, Sum to n terms of special series	General term of series in AP and GP, Calculate sum of n terms of series.	Practice sheet	To determine general term of series in AP and GP, Calculate sum of n terms of series.

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15	Straight Lines	Slope of a line , Various forms of equations of a line, General equation, Distance of a point from a line	Slope of line, Calculate angle between 2 line, various forms of equation of line. To calculate distance between 2 parallel lines.	Practice sheet	To find Slope of line, Calculate angle between 2 line, To use various forms of equation of line. To calculate distance between 2 parallel lines.
10	Conic Section	Sections of a cone, Circle, Parabola, Ellipse, Hyperbola, Applications	Equation of circle in various forms, geometry of conic sections. Equation of parabola, ellipse, hyperbola. To apply the knowledge of conic section.	Practice sheet	To find equation of circle in various forms. To understand the geometry of conic sections. To find equation of parabola, ellipse, hyperbola. To apply the knowledge of conic section.
10	Limits and Derivatives	Intuitive idea of derivatives, Limits, Derivatives , First principle Method, Addition rule, Product rule, Quotient rule	Limiting values of different functions, derivatives using first principle, To use various rules for finding derivatives.	Practice sheet	To find limiting values of different functions, To calculate derivatives using first principle, To use various rules for finding derivatives,
10	Mathematical Reasoning	Statements, Truth table, Negation, Conjunction and disjunction, Implication and double implication, Validating statements	Truth value of statements, To check validity of statements, conjunction and disjunction of statements	Practice sheet	To find truth value of statements, To check validity of statements, To find conjunction and disjunction of statements

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15	Statistics	Measures of Dispersion, Mean Deviation, Variance and Standard deviation, Coefficient of variation	Mean deviation about mean and median, variance and standard deviation, coefficient of variation and analyze the data	Practice sheet	To find mean deviation about mean and median, To find variance and standard deviation, To find coefficient of variation and analyze the data
10	Probability	Random Experiments, Event, Axiomatic approach to probability	Sample space, Exhaustive events and mutually exclusive events, probability of an event for simple problems.	Practice sheet	To find sample space, To identify between Exhaustive events and mutually exclusive events, To find probability of an event for simple problems.