ACADEMIC PLANNER XI - MATH (2024-25)

Date	No. of working Days	Chapter	Demo./Practicals/Teaching Strategies Mode of Assessment
JULY 1-15	12	**CH-6-LINEAR INEQUALITIES:-** Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
16-31	13	**CH-15-STATISTICS:** Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data. **CH-5-COMPLEX NUMBERS AND QUADRATIC EQUATIONS** Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Modulus and the Conjugate of a Complex Number, Argand plane and Polar representation. **CLASS TEST**	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
AUG 1-15	11	**CH-1- SETS** Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Operations on sets, Complements of a set, Difference of sets. Complement of a set. Properties of sets and cardinal number of different operations.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
16-31	12	**CH-2- RELATIONS & FUNCTIONS:** Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R).Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
SEP 1-15	11	**CH-3-TRIGONOMETRIC FUNCTIONS** - Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to	**Inducto - Deductive Method/ Analytico - Synthetic Method /**

		another **INTERNAL ASSESSMENT/PRACTICAL - 1** **(BEFORE 12 SEPT 2022)** **TERM -1 EXAM - 16 SEP. TO 30 SEP.**	**Problem - solving Method**
16-30	**12**	**CH-3-TRIGONOMETRY-** Definition of trigonometric functions with the help of unit circle. Truth of the identity $sin^2x + cos^2x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing $sin(x \pm y)$ and $cos(x \pm y)$ in terms of $sinx$, $siny$, $cosx$ & $cosy$ and their simple applications. Deducing identities like the following: $tan(x \pm y) = \frac{tanx \pm tany}{1 - \mp tanxtany}, cot(x \pm y) = \frac{cotxcoty \mp 1}{coty \pm cotx}$ $sin\alpha \pm sin\beta = 2sin\frac{1}{2}(\alpha \pm \beta)cos\frac{1}{2}(\alpha \mp \beta)$ $cos\alpha + cos\beta = 2cos\frac{1}{2}(\alpha + \beta)cos\frac{1}{2}(\alpha - \beta)$ $cos\alpha - cos\beta = - 2sin\frac{1}{2}(\alpha + \beta)sin\frac{1}{2}(\alpha - \beta)$ **Identities related to sin2x, cos2x, tan2x, sin3x, cos3x and tan3x.**	**Inducto-Deductive Method/ Analytico-Synthetic Method/Problem-solving Method**
OCT 1-15	**9**	**CH-13- LIMITS AND DERIVATIVES** **Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions.**	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
16-31	**12**	**CH-13-LIMITS AND DERIVATIVES (CONTD.)** **Derivative introduced as rate of change both as that of distance function and geometrically. Derivative - Relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.**	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
NOV 1-15	**10**	**CH-10-STRAIGHT LINES** **Brief recall of two dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.** **CLASS TEST**	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
16-30	**13**	**CH-7-PERMUTATIONS AND COMBINATION** **Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for nPr and nCr and their connections, simple applications.**	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method**

DEC 1-15	11	**CH-16-PROBABILITY** Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method**
16-31	13	**CH-11- CONIC SECTIONS** Sections of a cone: circles, ellipse, parabola hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle. **CH-12-INTRODUCTION TO 3D GEOMETRY** Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method** **Use of Geogebra**
JAN 16-31	13	**CH-8-BINOMIAL THEOREM** Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method**
FEB 1-15	12	**CH-9-SEQUENCE & SERIES** Sequence and Series. Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.	**Inducto - Deductive Method/ Analytico - Synthetic Method / Problem - solving Method**

TERMWISE SYLLABUS	
UNIT TEST 1	**CHAPTERS: 6, 15 (Starts: 15 July)**
HALF YEARLY	**CHAPTERS: 1,2, 5, 15 (Starts: 17 Sept)**
UNIT TEST 2	**CHAPTERS: 3, 13 (Starts: 18 Nov)**
ANNUAL EXAMS	**CHAPTERS: 1 - 16 (Starts: Feb 2025)**

ANNUAL EXAMINATION 2024