



INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF MATHEMATICS
CLASS XI
YEAR PLAN (2022-2023)

Subject (Code: 041/241)

UNIT No.	Unit	Marks
I	Sets and Functions	10
II	Algebra	20
III	Coordinate Geometry	04
IV	Calculus	27
V	Statistics and Probability	13
	TOTAL	80

MONTH	UNITS/CHAPTERS	Subject Enrichment Activity
May 2022	<p>SETS</p> <p>Sets and their representations. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of real numbers especially intervals (with notations), Power set. Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set.</p>	
JUNE 2022	<p>SETS (CONTINUED)</p> <p>Properties of Complement Sets. Practical applications of Union and Intersection</p> <p>LINEAR INEQUALITIES:</p> <p>Algebraic solutions of linear inequalities in one variable and their representation on the number line.</p>	Activity -1
	SUMMER BREAK	
AUGUST 2022	<p>RELATIONS AND FUNCTIONS Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions, with their graphs. Concept of exponential and logarithmic function.</p> <p>TRIGONOMETRIC FUNCTIONS:</p> <p>Angles (degree & radian measure). Trigonometric functions. Sum and difference of angles. Rules for double and half angles</p> <p>DIAGONISTIC TEST</p>	Activity -2 Activity -3 Activity -4

September	<p>COMPLEX NUMBERS & QUADRATIC EQUATIONS: Need for complex numbers, especially, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system.</p> <p>PERMUTATIONS & COMBINATIONS: Fundamental principle of counting. Factorial n. Permutations and combinations.</p> <p>BINOMIAL THEOREM:</p> <p>History, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, General and middle term in binomial expansion, simple applications.</p>	
October 2022	<p>BRIDGE COURSE</p> <p>STATISTICS: Measures of dispersion; mean deviation, variance and standard deviation of ungrouped/grouped data.</p> <p>PROBABILITY: Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events- 'not', 'and' & 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with the theories of earlier classes. Probability of an event, probability of 'not', 'and' & 'or' events.</p> <p>STRAIGHT LINES:</p> <p>Slope of a line. Angle between two lines. Various forms of equation of a line: parallel to axis, point-slope form, slope-intercept form, two-point form, intercept form. General equation of a line.. Distance of a point from a line.</p> <p>DIAGONISTIC TEST</p>	<p>Activity -5</p> <p>Activity -6</p> <p>Activity - 7</p>
November 2022	<p>SEQUENCES & SERIES: Arithmetic Progression (A.P.). Arithmetic Mean (A.M). Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., Arithmetic and Geometric series infinite G.P. and its sum. Geometric mean (G.M.), relation between A.M. and G.M.</p> <p>DIAGONISTIC TEST</p>	
December 2022	<p>LIMITS & DERIVATIVES:</p> <p>Derivative introduced as rate of change both as that of distance function and geometrically Intuitive idea of limit. Limits of polynomials and rational functions Trigonometric, exponential and logarithmic functions. Definition of derivative related to slope of tangent of the curve. Derivative of sum, difference, product and</p>	<p>Activity - 8</p>

	quotient of functions. Derivatives of polynomial and Trigonometric functions. DIAGONISTIC TEST	
	Winter Break	
January 2023	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. THREE DIMENSIONAL GEOMETRY: Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula. DIAGONISTIC TEST	Activity -9 Activity – 10
February 2023	REVISION & ANNUAL EXAM 2022-23	

