O. P. JINDAL SCHOOL, SAVITRINAGAR, TAMNAR

Annual Syllabus Break-up for the session 2023-2024

Subject – Mathematics Class - XII

Sl.	Month	No. of Instructional days	No. of periods	Chapters to be taught	Subject enrichment activities	Values to be imparted / Leaning outcomes	Extra content to be taught
1	**APRIL**	21	30	**3. Matrices** **4. Determinants**	Preparing Matrices of various orders eg. 1x3, 2x4, 3x4 with given mathematical formula. Solving a determinant of order 3 by expanding along all the 3 rows and all the 3 columns and verify that sum of the products of elements of any row(or column) with their corresponding cofactors is always equal to the value of the determinant.	Moving from specific examples to general results, students will be able to connect the various operations on matrices. Students would be able to – ➢ Identify a matrix of specific order ➢Form a matrix of certain order ➢ Perform operations like sum, difference, product of matrices Students will be able to apply the knowledge of determinants in finding the area of a triangle and solving system of linear equations in two or three variables.	Some more theorems and problems will be discussed and solved from R. S. Aggrawal book. Some more theorems and problems will be discussed and solved from R. S. Aggrawal book.
2	**MAY**	7	7	**1. Relations and Functions**	To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m): l ⊥ m} is symmetric but neither reflexive nor transitive	Students will be able to identify different types of relations and functions	Some more theorems and problems will be discussed and solved from R. S. Aggrawal book.

2	**JUNE**	11	16	**2. Inverse Trigonometric Functions** **5. Continuity and Differentiability**	To draw the graph of $\sin^{-1} x$, using the graph of sin x and demonstrate the concept of mirror reflection (about the line y = x) Exploring the values of different inverse trigonometric functions Demonstrates ways to relate differentiability and continuity of a function with each other. Draw the graph of distance vs time and find instantaneous velocity.	Students will be able to draw the graphs of $\sin^{-1}x$, $\cos^{-1}x$, $\tan^{-1}x$ and apply the knowledge of ITF in calculus. Students will be able to apply the knowledge of differentiation in various sciences.	Some more properties and problems will be discussed and solved from R. S. Aggrawal book. Some more problems will be discussed and solved from R. S. Aggrawal book.
3	**JULY**	23	34	**6. Applications of Derivatives** **7. Integrals**	➢ Graphs to understand the concepts of local maxima, local minima and point of inflection. ➢ To verify that amongst all the rectangles of the same perimeter, the square has the maximum area To evaluate the definite integral as the limit of a sum and verify it by actual integration	Students will be able to apply the knowledge of differentiation in various fields like rate of change of quantities, increasing and decreasing functions and maximum and minimum value of function in different practical problems. Develops and understands the processes in Integral calculus based on the ideas of differential calculus learnt earlier.	Some more problems will be discussed and solved from R. S. Aggrawal book. Some more problems will be discussed and solved from R. S. Aggrawal book
4	**AUGUST**	23	34	**8. Applications of Integrals** **9. Differential Equations**	Graphs of simple curves, especially lines, circles, parabolas, ellipses to understand the concept of finding the area under curves using integration. Examples to illustrate how differential equations can be used to describe mathematical	Students will be able to apply the concepts of Integral calculus to calculate the areas enclosed by curves. Develops the concepts of differential equations using the ideas of differentiation	Some more problems will be discussed and solved from R. S. Aggrawal book

					models such as population expansion or radioactive decay.	and integration.	
5	**SEPT**	**12**	**Revision and Assessment(Half Yearly Examination)**				
6	**OCTOBER**	20	29	**10. Vectors** 11. **Three - dimensional Geometry**	To represent the displacement of a body of given direction e.g. displacement of 120 km towards 30° noth of east To verify that the angle between two lines is the same as the angle between their parallel vectors.	Constructs the idea of vectors and their properties and relates them to earlier learnt concepts in different areas of mathematics such as geometry, coordinate geometry etc. Evolves newer concepts in three-dimensional geometry from that learnt earlier, in the light of vector algebra, such as, direction cosines, equations of lines and planes under different conditions etc.	Some more problems will be discussed and solved from R. S. Aggrawal book Some more problems will be discussed and solved from R. S. Aggrawal book
7	**NOVEMBER**	13	20	**12. Linear Programming** **13. Probability**	To minimize the cost of the food, meeting the dietary requirements of the staple food of the adolescent students of the school. To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example	Formulates and solves problems related to maximization/ minimization of quantities in daily life situations using systems of inequations learnt earlier. Calculates conditional probability of an event and uses it to evolve Bayes' theorem and multiplication rule of probability.	Some more problems will be discussed and solved from R. S. Aggrawal book Some more problems will be discussed and solved from R. S. Aggrawal book

8	**DECEMBER**	**Revision and Assessment(PRE-BOARD-I)**
9	**JANUARY**	**Revision and Assessment(PRE-BOARD-II)**

SYLLABUS FOR EXAMINATION

SN	EXAMINATION	EXAMINATION'S MONTHS	MAX MARKS	Max Time	SYLLABUS FOR EXAMINATION
1	**TEST – 1**	**July**	20	1 Hr	1, 2, 3,4
2	**Half Yearly Examination**	**September**	80	3 Hrs	1,2,3,4,5,6,7,8
3	**Preboard-I**	**December**	80	3 Hr	1-13
4	**Preboard-II**	**January**	80	3 Hrs	1-13
5	**Annual Examination**	**February**	80	3 Hr	1-13