

Syllabus of Mathematics

Class 10th – Mathematics

Units	Unit Name	Marks
I	Number Systems	08
II	Algebra	17
III	Coordinate	04
IV	Geometry	28
V	Mensuration	13
VI	Statistics and probability	10
	Total	80

S. No.	Typology of Questions	Very Short Answer Objective type (VSA) (1 Mark)	Short Answer-I (SA) (2 Marks)	Short Answer II (SA) (3 Marks)	Long Answer (LA) (4 Marks)	Total Marks	% Weightage (approx.)
1	Remembering: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	6	2	2	1	20	25
2	Understanding: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	6	1	1	3	23	29

3	Applying: Solve problems to new situations by applying acquired knowledge, techniques and rules in a different way and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations	5	2	2	1	19	24
4	Evaluating: Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. Creating: Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	3	1	3	1	18	22
Total		20X1=20	6X2=12	8X3=24	6X4=24	80	100

INTERNAL ASSESSMENT	20 MARKS
Pen Paper Test and Multiple Assessment (5+5)	10 marks
Portfolio	05 marks
Lab Practical (Lab activities to be done from the prescribed books)	05 marks

1. Real Numbers

- Introduction to Real Numbers
- Euclid's Division Lemma
- The Fundamental Theorem of Arithmetic
- Irrational Numbers – Revision
- Rational Numbers and Their Decimal Expansions – Revision
- Euclid's Division Algorithm
- Theorems to prove a number is irrational
- Theorems on rational numbers
- Some Applications of the Fundamental Theorem of Arithmetic

2. Polynomials

- Introduction to Polynomials
- Geometrical Meaning of the Zeroes of a Polynomial
- Relationship between Zeroes and Coefficients of a Polynomial
- Division Algorithm for Polynomials

3. Pair of Linear Equations in Two Variables

- Introduction to Pair of Linear equations in two variables
- Pair of Linear Equations in Two Variables
- Graphical Representation of a Pair of Linear Equations

- Graphical Method of Solving Simultaneous Linear Equations
- Algebraic Methods of Solving Simultaneous Linear Equations in Two Variables
- Algebraic Methods of Solving a Pair of Linear Equations
 - Substitution Method
 - Elimination Method
 - Cross-Multiplication Method
- Equations Reducible to a Pair of Linear Equations in Two Variables
- Applications to Word Problems

4. Quadratic Equations

- Introduction to Quadratic Equations
- Solution of a Quadratic Equation by Factorization
- Solution of a Quadratic Equation by Completing the Square
- Nature of roots

5. Arithmetic Progressions

- Introduction to Arithmetic Progressions
- n th Term of an AP
- Sum of First n Terms of an AP

6. Triangles

- Introduction to Triangles
- Similar Figures
- Similarity of Triangles and their Properties
- Criteria for Similarity of Triangles
- Areas of Similar Triangles
- Pythagoras Theorem

7. Coordinate Geometry

- Introduction to Coordinate Geometry
- Distance Formula
- Section Formula

- Area of a Triangle
- 8. Trigonometry**
 - Introduction to Trigonometry
 - Trigonometric Ratios
 - Trigonometric ratios of some Specific Angles
 - Trigonometric ratios of complementary angles
 - Trigonometric identities
- 9. Applications of Trigonometry**
 - Introduction to Applications of Trigonometry
 - Heights and Distances
- 10. Circles**
 - Introduction to Circles
 - Tangent to a Circle
 - Number of Tangents from a Point on a Circle
- 11. Constructions**
 - Introduction to Constructions
 - Division of a Line Segment
 - Construction of Tangents to a Circle
- 12. Area Related to Circles**
 - Introduction to Areas Related to Circles
 - Perimeter and Area of a Circle - Review
 - Areas of Sector and Segment of a Circle
 - Areas of Combinations of Plane Figures
- 13. Surface Areas and Volumes**
 - Introduction to Surface Areas & Volumes
 - Surface Area of a Combination of Solids
 - Volume of a Combination of Solids
 - Conversion of Solid from One Shape to Another
 - Frustum of a Cone
- 14. Statistics**

- Introduction to Statistics & Data Handling
- Review of Statistics & Data Handling
- Cumulative Frequency Polygon Curve (An Ogive)
- Frequency Polygon

15. Probability

- Introduction to Probability
- Theoretical Approach to Probability

