# MATHEMATICS

**(For Science Students Only)**

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| Part – I | 75 Marks |
| Part – II | 75 Marks |
| **Total** | **150 Marks** |

| **Part-I (Class-IX)** | **Marks: 75** | **Time: 2:30 Hours** |
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**Unit-1 : REAL NUMBERS**
- 1.1 Introduction to Real Numbers
- 1.2 Radical Expressions
- 1.3 Applications of Real Numbers in Daily Life

**Unit-2 : LOGARITHMS**
- Introduction
- 2.1 Scientific Notation
- 2.2 Logarithm
- 2.3 Common Logarithm
- 2.4 Laws of Logarithm

**Unit-3 : SETS AND FUNCTIONS**
- Introduction
- 3.1 Mathematics as the Study of Patterns, Structures and Relationships
- 3.2 Operations on Sets
- 3.3 Binary Relations

**Unit-4 : FACTORIZATION AND ALGEBRAIC MANIPULATION**
- Introduction
- 4.1 Identifying Common Factors and Trinomials Concretely, Pictorially and Symbolically
- 4.2 Factorization of the Expression
- 4.3 Highest Common Factor (HCF) and Least Common Multiple (LCM) of Algebraic Expression
- 4.4 Square Root of an Algebraic Expression

**Unit-5 : LINEAR EQUATIONS AND INEQUALITIES**
- Introduction
- 5.1 Linear Equation
- 5.2 Linear Inequalities
- 5.3 Feasible Solution

**Unit-6 : TRIGONOMETRY**
- Introduction
- 6.1 Identifying Angles in Standard Position (Degrees and Radians)
- 6.2 Trigonometric Ratios
- 6.3 Trigonometric Identities
- 6.4 Values of Trigonometric Ratios of Special Angles
- 6.5 Solution of a Triangle
- 6.6 The Angle of Elevation and the Angle of Depression

**Unit-7 : COORDINATE GEOMERTY**
- Introduction
- 7.1 Coordinate Plane
- 7.2 Equations of Straight Lines
- 7.3 Applications of Coordinate Geometry in Real Life Situations

**Unit-8 : LOGIC**
- Introduction
- 8.1 Statement

**Unit-9 : SIMILAR FIGURES**

Introduction
9.1 Similarity of Polygons
9.2 Area of Similar Figures
9.3 Volume of Similar Solids
9.4 Geometrical Properties of Polygon and their Applications

**Unit-10 : GRAPHS OF FUNCTIONS**
Introduction
10.1 Functions and their Graphs
10.2 Exponential Growth/Decay of a Practical Phenomenon through its Graph

**Unit-11 : LOCI AND CONSTRUCTION**
Introduction
11.1 Construction of Triangles
11.2 Perpendicular Bisectors and Medians of a Triangle
11.3 Angle Bisector of a Triangle
11.4 Altitudes of Triangle
11.5 Loci and construction
11.6 Real Life Application of Loci

**Unit-12 : INFORMATION HANDLING**
Introduction
12.1 Ungrouped and Grouped Data
12.2 Measures of Location (Central Tendency)

**Unit-13 : PROBABILITY**
Introduction
13.1 Probability of Single Event
13.2 Probability of an Event Not Occurring
13.3 Real Life Problems Involving Probability
13.4 Relative Frequency as an Estimate of Probability
13.5 Real Life Application of Relative Frequency
13.6 Expected Frequency
13.7 Real Life Application on Expected Frequency

**Prescribed Book:** **Mathematics (Science Group) for Part – I (Class –IX)**
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| **Part-II (Class-X)** | **Marks: 75** | **Time: 2:30 Hours** |
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**Unit-1 : QUADRATIC EQUATIONS**
1.1 Quadratic Equation
1.2 Solution of quadratic equations
1.3 Quadratic Formula
1.4 Equations reducible to quadratic form
1.5 Radical equations

**Unit-2 : THEORY OF QUADRATIC EQUATIONS**
2.1 Nature of the roots of a quadratic equation
2.2 Cube Roots of Unity and their Properties
2.3 Roots and Co-efficient of a quadratic equation
2.4 Symmetric functions of the roots of a quadratic equation