

Mathematics Syllabus for 9th & 10th / O - Level

Instructions:

The objective of “Champion of Subject” is to test the conceptual abilities of the students and candidates regarding the subject.

- This is the comprehensive syllabus for the “Champion of Subject”.
- Candidates are advised to thoroughly go through and study the syllabus
- The test will comprise of 120 MCQs.
- The time allowed for the test will be 120 min.
- MCQs will cover part or all the syllabus mentioned below.
- Munzill reserved the right to conduct an online or physical test.

Chapter 1: Matrices and Determinants

1.1: Matrix

- Introduction to Matrix
- Order of Matrix
- Equal Matrices

1.2: Types of Matrices

1.3: Addition and Subtraction of Matrices

1.4: Multiplication of Matrices

1.5: Multiplicative Inverse of a Matrix

1.6: Solution of Simultaneous Linear Equations

Chapter 2: Real and Complex Numbers

2.1: Real Numbers

Introduction to Real Numbers

Introduction to Rational Numbers

Introduction to Irrational Numbers

Presenting Rational Numbers on Number Line

Presenting Irrational Numbers on Number Line

Decimal Representation of Rational Number

Decimal Representation of Irrational Number

2.2: Properties of Real Numbers

2.3: Radicals and Radicands

- 2.4: Laws of Exponents/Indices
- 2.5: Complex Numbers
- 2.6: Basic Operations on Complex Numbers

Chapter 3: Logarithms

- 3.1: Scientific Notation
- 3.2: Logarithm
- 3.3: Common Logarithm and Natural Logarithm
- 3.4: Laws of Logarithm
- 3.5: Application of Laws of Logarithm in Calculations

Chapter 4: Algebraic Expressions and Algebraic Formulas

- 4.1: Algebraic Expressions
- 4.2: Algebraic Formulae
- 4.3: Surds and their Application
- 4.4: Rationalization of Surds

Chapter 5: Factorization

- 5.1: Factorization
- 5.2: Remainder Theorem and Factor Theorem
- 5.3: Factorization of a Cubic Polynomial

Chapter 6: Algebraic Manipulation

- 6.1: Highest Common Factor & Least Common Multiple
- 6.2: Basic Operations on Algebraic Fractions
- 6.3: Square Root of Algebraic Expression

Chapter 7: Linear Equations and Inequalities

- 7.1: Linear Equations
- 7.2: Equations Involving Absolute Value
- 7.3: Linear Inequalities
- 7.4: Solving Linear Inequalities

Chapter 8: Linear Graphs & Their Application

8.1: Cartesian Plane and Linear Graphs

8.2: Conversion Graphs

8.3: Graphically Solving 2 Variable Linear Equation

Chapter 9: Introduction to Coordinate Geometry

9.1: Distance Formula

9.2: Collinear Points

9.3: Mid-Point Formula

Chapter 10: Congruent Triangles

10.1: Congruent Triangles

Chapter 11: Parallelograms and Triangles

11.1: Parallelograms and Triangles

Chapter 12: Line Bisectors and Angle Bisectors

12.1: Bisector of a Line Segment and Angle

Chapter 13: Sides and Angles of a Triangle

13.1: Sides and Angles of a Triangle

Chapter 14: Ratio and Proportion

14.1: Ratio and Proportion

Chapter 11: Quadratic Equations

11.1: Quadratic Equations

11.2: Solution of Quadratic Equations

11.3: Quadratic Formula

11.4: Equations Reducible to Quadratic Form

11.5: Radical Equations

Chapter 12: Theory of Quadratic Equations

12.1: Nature of the Roots of a Quadratic Equation

12.2: Cube Roots of Unity and Their Properties

12.3: Roots and Co-Efficients of a Quadratic Equation

12.4: Symmetric Functions of the Roots of a Quadratic Equation.

12.5: Formation of a Quadratic Equation

12.6: Synthetic Division

12.7: Simultaneous Equations

Chapter 13: Variations

13.1: Ratio, Proportion and Variations

13.3: Joint Variation

Chapter 14: Partial Fractions

14.1: Fraction

- Partial Fractions

14.2: Resolution of Fraction Into Partial Fractions

Chapter 15: Sets and Functions

15.1: Sets

15.2: Binary Relation

15.3: Function or Mapping

Chapter 16: Basic Statistics

16.1: Frequency Distribution

16.2: Cumulative Frequency Distribution

16.3: Measures of Central Tendency

Chapter 17: Introduction to Trigonometry

17.1: Measurement of an Angle

17.2: Sector of a Circle

17.3: Trigonometric Ratios

17.4: Trigonometric Identities

17.5: Angle of Elevation and Angle of Depression

Chapter 18: Projection of a Side of a Triangle

18.1: Demonstrative Geometry

Chapter 19: Chords of a Circle

19.1: Basic Concepts Of The Circle

19.2: Theorems on Circles

Chapter 20: Tangent to a Circle

20.1: Theorems on Tangent to a Circle

Chapter 21: Chords and Arcs

21.1: Theorems on Chords and Arcs

Chapter 22: Angle in a Segment of a Circle

22.1: Theorems on Angle in a Segment of a Circle

Chapter 23: Practical Geometry-

23.1: Construction of a Circle

23.2: Circles Attached to Polygons

23.3: Tangent to the Circle