



Summer Fields School

KAILASH COLONY, NEW DELHI-110048

SYLLABUS FOR 40th ARYABHATTA INTER-SCHOOL MATHEMATICS COMP. - 2023 (Class V)

(PROBLEMS BASED ON THE FOLLOWING TOPICS)

The duration of the Test will be 2 Hours and Maximum Marks will be 100.

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|---|----------------------------------|
| 1. Four Fundamental Operations of Mathematics | 2. Roman Numbers |
| 3. L.C.M & G.C.D (H.C.F) | 4. Decimals & Fractions |
| 5. Metric System | 6. Percentage |
| 7. Time Conversions | 8. Lines and Angles |
| 9. Polygons | 10. Circle |
| 11. Triangles | 12. Average |
| 13. Speed, Distance, Time | 14. Area of Squares & Rectangles |
| 15. Perimeter of Linear Figures. | 16. Volume of Cubes & Cuboids |

SYLLABUS FOR 40th ARYABHATTA INTER-SCHOOL MATHEMATICS COMP. - 2023 (Class VIII)

The duration of the Test will be 2 Hours and Maximum Marks will be 100.

UNIT: 1

Percentage, Profit & loss, S.I, C.I, Ratio & Proportion, Time & Work, Unitary method, Direct & inverse variation.

UNIT: 2

Area & Perimeter of all three sided & four sided plain figures & Circle; Area & Volume of Cube, Cuboid, Right Circular Cylinder, Right Circular Cone & Sphere, Hemisphere, Combination & Conversion of solids.

UNIT: 3

Number system: Addition, Subtraction, Multiplication, Division of numbers, Fractions, Rational Numbers, Irrational Numbers, Square and Square Root, Cube and Cube Root

UNIT: 4

ALGEBRA: Addition, Subtraction, Multiplication & Division of algebraic expressions (including quotient from) Simplification of brackets.

Solution of linear equation in one variable & pair of simultaneous linear equation in two variables & problems based on it

FACTORIZATION: Factorization of algebraic expression using special products and factorization of quadratic polynomials, Cubic Polynomials.

UNIT: 5

GEOMETRY: Congruency and Similarity of Triangles, Pair of angles, Parallel lines, Triangles, Quadrilateral, Types of Quadrilaterals and related properties, Circles.

UNIT: 6

STATISTICS: Frequency distribution and cumulative frequency distribution table, range and class marks; mean, median and mode of ungrouped data.

FORMAT OF QUESTION PAPERS FOR VIII

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| A. Logical Reasoning (MCQs) | 10 Questions of 1 mark each. |
| B. Multiple Choice Questions | 20 Questions of 1 mark each. |
| C. Free Response Questions (Type I) | 20 Questions of 2 marks each. |
| D. Free Response Questions (Type II) | 10 Questions of 3 mark each. |

No working / descriptive answers of any question is to be given. Only the answers are to be written on the answer sheet in the space provided



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SYLLABUS FOR 40th ARYABHATTA INTER-SCHOOL MATHEMATICS COMP. - 2023 (Class XI)

The duration of the Test will be 2 Hours and Maximum Marks will be 100.

- Sets
- Relations and Functions
- Trigonometric Functions
- Complex Numbers
- Linear Inequalities
- Permutations and Combinations
- Binomial Theorem
- Sequences and Series: Arithmetic Progression, Geometric Progression, Special Series
- Straight Lines
- Conic Sections: Circles, parabola, Ellipse, Hyperbola
- Limits and Derivatives
- Statistics (Mean, Mode, Median, Variance, Standard Deviation, Coefficient of Variation)
- Probability

FORMAT OF QUESTION PAPER FOR CLASS XI

- A. Multiple Choice Questions
- B. Free Response Questions (Type I)
- C. Free Response Questions (Type II)

30 Questions of 1 mark each.
20 Questions of 2 marks each.
10 Questions of 3 mark each.

No working / descriptive answers of any question is to be given. Only the answers are to be written on the answer sheet in the space provided.