FEES :

Rs.150/- per candidate (Out of this, Rs.125/- <u>per candidate</u> should be sent to AMTI, and the Institution retaining Rs.25/- <u>per candidate</u> for all expenses, including the download and printing the question papers from the mail supply of the answer sheets (A4 sheet) and the invigilation charges. **No further claim can be made by the institution for any type of expenses**).

SYLLABUS:

<u>Recommended topics for NMTC exam</u>

PRIMARY:

(Gauss Contest - V and VI Standards)

ARITHMETIC: Fractions, percentages, profit and loss, tests of divisibility, LCM, HCF, Ratio and proportion, Calendar
MENSURATION: Triangles, Quadrilaterals, Circles.
ALGEBRA: Algebra as literal Arithmetic, Addition, subtraction, multiplication and division of simple Arithmetic expressions.
GEOMETRY: Straight lines, parallel lines, Angle properties of triangles, quadrilaterals and polygons.

SUB JUNIOR:

(Kaprekar Contest - VII and VIII Standards)

All the topics for primary and,
ARITHMETIC: Square roots and cube roots, Allegation, average , time and work, time and distance, Races, Games of skill, Travelling around a circle.
MENSURATION: Three Dimensional: cubes, cuboids, sphere, cone, cylinder, pyramids.
ALGEBRA: Algebraic equations of degree 1 and degree 2. Algebraic identities, factorization of algebraic expressions, laws of indices, basics of surds.
GEOMETRY: Triangle inequalities, parallelograms, trapezoids, Pythagoras theorem.
NUMBER THEORY: Prime and composite numbers, divisibility.
[Note: Apart from these, the children shall practise to solve logical questions in basic mathematics].

JUNIOR:

(Bhaskara Contest - IX and X Standards)

All the topics for Primary, Sub junior and the following:

ALGEBRA: Quadratic and Higher degree Algebraic equations, Remainder theorem, Logarithms, Sequences and series, Scales of notations, Mathematical Induction, Basic inequalities.

GEOMETRY: Circle theorems, Chords, Arcs, Angles in segments, Cyclic Quadrilaterals, Tangents, Alternate Segment theorem, intersecting chord theorem, Apollonius theorem, and Stewart's theorem.

NUMBER THEORY: Modular arithmetic, Greatest Integer function, least integer functions.

COMBINATORICS: Fundamental principle of counting, Basics of permutations and combinations, Principle of inclusion and exclusion, Pigeon hole principle.

INTER:

(Ramanujan Contest - XI and XII Standards)

All the topics for Primary, Sub Junior, Junior and the following:

ALGEBRA: Polynomials, inequalities, (C-S inequality), Functional equations.

GEOMETRY: Trigonometric, vector, Coordinate Geometric and Complex number methods may be used.

NUMBER THEORY: Fermat and Wilson theorem, Diophantine equations.

COMBINATORICS: Counting techniques, Recurrence relations.

SENIOR:

(ARYABHATTA CONTEST FOR COLLEGE LEVEL):

It is a three hours examination of subjective questions with the syllabus of typical B.Sc. Mathematics course.

Medium of the Senior Level will be ENGLISH only. It'll be conducted on the day and timings of the FINAL Level NMTC Examination.