NATIONAL SCIENCE TALENT SEARCH EXAMINATION

S Y L L A B U S

Class - 1

Mathematics : Numbers upto 100, Ordinal numbers, Addition, Subtraction, Lengths, weight, capacity, Time, Money, Geometrical Shapes.

General Science : Living & Non-living things, Plant life, Animal life, Human body, Air water & weather.

Class - 2

Mathematics : Numbers, Addition, Subtraction, Multiplication, Division, Length, Weight, Capacity, Time, Money, Shapes.

General Science : Living & Non-living things, Plant life, Animal life, Human body, Air water & weather, Rock and Minerals, Our universe.

Class - 3

Mathematics : Numbers, Addition, Subtraction, Multiplication, Division, Fractions, Length, Weight, Capacity, Time, Money, Shapes.

General Science : Living & Non-living things, Plant life, Animals their food & Home, birds: beaks claws & nests of the birds, Soil, Air water and weather, Our universe, Human body, Safety & first aid.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 4

Mathematics : Large Numbers, Roman numerals, Addition and Subtraction, Multiplication and division, Factors and Multiples, Fractions, Length, Weight, Capacity, Time, Geometry, Perimeter and area.

General Science : Plant life - I, Plant life - II, Animal life - I, Animal life - II, Food & Digestion, Health & Hygiene, Teeth & Microbes, Safety & First aid, Our clothes, Air water and weather, Our universe.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 5

Mathematics : Large Numbers, Factors and multiples, Fractions and Decimals, Measurement of Length, Weight, Capacity, Volume, Time, Temperature, Conversions, Percentages, Ratios, Speed distance and time, Simple interest, Profit and loss, Geometry, Perimeter and area.

General Science : Plant life, Animal life - II, Human body - I, Human body - II, Soil Rocks & Minerals, Air water and weather, The moon, Matter, Force work & energy.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 6

Mathematics : Knowing our Numbers, Whole Numbers, Playing with Numbers, Basic Geometrical Ideas, Understanding Elementary Shapes, Integers, Fractions, Decimals, Data Handling, Mensuration, Algebra, Ratio and Proportion, Symmetry.

Physics : Motion and Measurement of distances, Light shadows and reflections, Electricity and circuits.

Chemistry : Sorting materials into groups, Separation of substances, Changes around us, Water.

Biology : Food & its source, components of food, Fibre to fabric, Plants, Body movements, Living organisms and their surroundings.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 7

Mathematics : Integers, Fractions and Decimals, Data Handling, Simple Equations, Lines and Angles, Triangle and its Properties, Congruence of Triangles, Comparing Quantities, Rational Numbers, Practical Geometry, Perimeter and Area, Algebraic Expressions, Exponents and Powers, Symmetry.

Physics : Motion and time, Heat, Light.

Chemistry : Physical and chemical changes, Acids bases and salts, Winds storms and cyclones.

Biology : Nutrition in plants, nutrition in animals, Fibre to fabric, Organization in living beings, Changes and adaptation, Soil, Respiration in organisms, Transportation in living beings, Reproduction and growth in plants.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 8

Mathematics : Rational Numbers, Linear Equations in One Variable, Understanding Quadrilaterals, Data Handling, Squares and Square Roots, Cubes and Cube Roots, Comparing Quantities, Algebraic Expressions and Identities, Visualizing Solid Shapes, Mensuration, Exponents and Powers, Direct and Inverse Proportions, Factorization.

Physics : Force and Pressure, Friction, Sound, Chemical effects of electric current, Some natural phenomena, Light.

Chemistry : Synthetic fibres and plastics, Materials: Metals and non-metals, Coal and petroleum, Combustion and flame.

Biology : Food production and management, Cell, Microorganisms, Conservation of plants and animals, Reproduction in animals.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 9

Mathematics : Number Systems, Polynomials, Co-ordinate Geometry, Linear Equations in Two Variables, Introduction to Euclid's Geometry, Lines and Angles, Triangles, Quadrilaterals, Areas of Parallelograms and Triangles, Circles, Heron's Formula, Surface Areas and Volumes.

Physics : Motion, Force and laws of motion, Gravitation & Pressure, Work energy & power.

Chemistry : Matter in our surroundings, Is matter around us pure, atoms and molecules.

Biology : Cell, Tissues, Diversity in living organisms, Health and diseases, Improvement in food resources.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 10

Mathematics : Real Numbers, Polynomials, Pair of Linear Equations in Two Variables, Quadratic Equations, Arithmetic Progressions, Triangles, Co-ordinate Geometry, Introduction to Trigonometry, Some Applications of Trigonometry, Circles, Areas Related to Circles, Surface Areas and Volumes.

Physics : Light, reflection & refraction, The human eye and the colourful world, Electricity, Magnetics effects of electric current.

Chemistry : Chemical reactions & equations, Acids bases and salts, Metals & non-metals, Carbon and its compounds.

Biology : Life processes, Control & Co-ordination, Reproduction, Heredity & Evolution, Our Environment.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 11

Mathematics : Sets, Relations and Functions, Principle of Mathematical Induction, Logarithms, Complex Numbers & Quadratic Equations, Linear In-equations, Sequences and Series, Trigonometry, Straight Lines, Conic Sections, Permutations and Combinations, Binomial Theorem, Statistics, Mathematical Reasoning, Limits and Derivatives, Probability, Introduction to 3D Geometry.

(OR)

Biology : Diversity in the living world, Structural organisation in plants & animals, Cell structure and functions, Plant physiology, Animal physiology.

Physics : Physical world, Units & measurements, Motion in a straight line, Motion in a plane, Laws of motion, Work energy & power, System of particles & rotational motion, Gravitation, Mechanical properties of solids, Mechanical properties of fluids, Thermal properties of matter, Thermodynamics.

Chemistry : Basic concepts of chemistry, Structure of atoms, Classification of elements & Periodicity in properties, Chemical bonding & molecular structure, States of matter: Gases & liquids, Thermodynamics, Equilibrium, Redox reaction, Hydrogen, s-Block elements, Some p-block elements, Organic chemistry: Basic principles & techniques.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.

Class - 12

Mathematics : : Relations and Functions, Inverse Trigonometric Functions, Matrices and Determinants, Continuity and Differentiability, Application of Derivatives, Integrals, Application of Integrals, Differential Equations, Vector Algebra, Three Dimensional Geometry, Probability, Linear Programming.

(OR)

Biology : Reproduction, Genetics and evolution, Biology and human welfare, Biotechnology, Ecology.

Physics : Electric charges and fields, Electrostatic potential and capacitance, Current electricity, Moving charges and magnetism, Magnetism and matter, Electromagnetic induction, Alternating current, Electromagnetic waves, Ray optics and optical instruments, Wave optics, Dual nature of radiation and matter, Atoms, Nuclei.

Chemistry : Solid state, Solutions, Electrochemistry, Chemical kinetics, Surface chemistry, Isolation of elements, p-block elements, d- and f-block elements, Coordination compounds, Haloalkanes and Haloarenes, Alcohols, Phenols and Ethers Aldehydes, Ketones and Carboxylic acids, Organic compounds containing nitrogen, Biomolecules.

Critical Thinking : This section includes a combination of skills like conscious application in real life, Logical & Inductive Reasoning, Tactics & Strategies in decision making, higher order thinking.