



SCHOLARSHIP TEST SYLLABUS FOR 10th MOVING 11th STUDENTS PHYSICS

Light-Reflection and Refraction : Reflection of Light, Spherical Mirrors, Mirror Formula and Magnification, Refraction of Light, Refractive Index, Lenses & Image Formation in lens using Ray diagram, Lens Formula & Magnification, Power of a lens, Partial & Total Internal Reflection

Electricity : Electric Current & Circuit, Electric Potential & Potential Difference, Circuit-Symbol of Components, Ohm's Law, Factors Affecting Resistance of Conductor, System/Combination of Resistors (Series & Parallel), Heating Effect of Electric Current, Electric Power

Magnetic Effect of Electric Current (MEEC) : Magnetic Field & Field Lines, Magnetic Field due to Current carrying conductor (Straight Conductor, Circular Loop, Solenoid), Force on a Current carrying conductor in magnetic field, Heating Effect of Electric Current, Domestic Electric Circuit

Magnetism : Types of Magnet, Properties of Magnet, Magnetic & Non-magnetic Materials, Magnetic Compass, Electromagnets, Use of Magnets, Magnetic Field

EMI : A.C. and D.C., Electric Generator,

Temperature & Heat : Thermo-metry, Effect of Heat (Thermal Expansion), Transfer of Heat, Latent Heat, Regelation, Anomalous Behaviour of Water, dew point & Humidity, Unit of Heat, Specific heat capacity, Heat Exchange

Sound : Production of Sound Waves & Its propagation, Perception of Sound, Vibrations, Audible and Inaudible Sounds, Noise Pollution, Reflection & Absorbtion of Sound

Chemical Effect of Electric Current : Electric Current, Conductivity of liquid, Chemical Effects of Electric Current, Electroplating

Force & Pressure : Definition & Explanation, Effect of Force (Shape & State), Types of Force (Contact force, Non-contact force), Pressure, Pressure due to liquid & gases, Atmospheric Pressure

Friction : Factors Affecting Friction, Need of Friction, Increasing or Reducing Friction, Fluid Friction

Work & Energy : Work, Work done by constant force, Energy, Forms of Energy (K.E. & P.E.), Transformation of Energy, Observation of Energy, Power-Rate of doing work

Motion : Motion in Straight Line, Uniform & non-uniform Motion, Distance & Displacement, Speed & Velocity, Acceleration, Graphs (x-t, v-t & at), Equation of motion, Uniform Circular motion (U cm)

Laws of Motion : Balanced & unbalanced force, Newton's Laws of Motion (I, II, & III), Conservation of momentum

Gravitation : Universal law of gravitation, Free fall (Acceleration due to gravity), Motion under gravity, mass & weight, Thrust & Pressure, Pressure in fluids, Archimedes Principle, Kepler's Law, Escape Velocity



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CHEMISTRY

Periodic Classification : Classification of Elements, Dobereiner Triads, Newlands Law of Octave, Mendeleev Periodic Table-Merits & Demerits, Modern Periodic Table, Electronic Configuration -Groups & Periods, Periodic Trends- Atomic Size, Metallic & Non-metallic character, Electronegativity & electropositivity

Chemical Reaction & Equations : Chemical Reaction, Chemical Equation, Writing Chemical Equation, Balancing Chemical Equation, Types of Chemical Reaction- i. Combination, ii. Decomposition, iii. Displacement, iv. Double displacement, Exothermic and Endothermic process, Rate of Chemical reaction, Factors affecting chemical reaction, Oxidation and Reduction, Corrosion, Rancidity

Metallurgy : Physical and Chemical Properties of metals and non-metals, Reaction of metal and non-metal, Reactivity series, Ionic Compounds, Metallurgy and Basic Principle of Metallurgy, Prevention of Corrosion

Carbon Compounds: Bonds in Carbon Compounds, Carbon - An Elements, Hydrocarbon saturated and unsaturated, Functional group in Carbon Compounds, Homologous Series, Nomenclature of carbon compounds, Chemical Properties of Carbon Compounds, Macro Molecule and Polymer

Acids, Base and Salts : Acid, Base, Salt - Basic Concept, Ionic Compounds, Arrhenius Theory of Acids and Bases, Classification of Acids and Bases, Concentration of Acid and Bases, pH of Solution, Universal Indicator, Reaction of Acids and Bases Salts, Ionic Compounds and Electrical Conductivity, Electrolysis and Electrolyses of Water

Structure of Atoms: Dalton Atomic Theory, Thomson Atomic Model, Rutherford Atomic Model, Bohr Atomic Model, Sub-atomic Particle, Atomic Number and Atomic Mass Number, Electronic Configuration

Mole Concept: Atomic Mass, Molecular Mass, Mole Concept: Calculation of Moles, Mass & Atoms



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MATHEMATICS

Triangles(Similalry, Pythagoras Theorem)

Circle

Co-ordinate Geometry

Trigonometry

Mensuration

Linear Equation in Two variable

Quadratic Equation

Arithmetic Progression

Probability

Statistics

Real Number

Polynomial

Quadrilateral

Lines and Angles



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BIOLOGY

Fundamental Unit of Life : Shape & Size of cells, Plasma membrane, Cell wall, Nucleus, Cytoplasm, Cell organelles-ER, Golgi, Lysosome, Mitochondria, Plastid, Vacuole

Cell Division : Mitosis, Meiosis

Animal Tissues : Epithelial, Connective, Muscular, Neural

Plant Tissue : Meristematic, Permanent, Parenchyma, Collenchyma, Sclerenchyma, Xylem, Phloem

Life Processes :

Nutrition : Autotrophic, Heterophic, Nutrition in Human beings

Respiration : Various respiratory pathways, ATP, Human Respiratory System

Circulation : Transportation in human beings, Human heart, blood vessels, Transportation of oxygen & CO₂, Blood pressure, Maintenance by platelets, Lymph

Excretion : Excretion in human beings, Artificial kidney

Control & Coordination : Animal's nervous system, Reflex actions, Human brain

Hormones in Animals : Endocrine glands in human beings

Reproduction in Organisms : Importance of variation, Reproduction by fission, Fragmentation, Regeneration, Budding, Vegetative propagation, Spore formation

Sexual reproduction in Flowering plants

Reproduction in Human beings : Male Reproductive System, Female Reproductive System, Post fertilisation events

Reproductive Health

Transportation in Plants : Transport of water, Transport of food & other substances

Co-ordination in Plants : Immediate response to stimulus, Movement due to growth

Our Environment : Ecosystem, Food chains & food web, Ozone layer depletion, Disposable cups in trains

Classification of Plants : Basis for classification, 5 kingdom classification, Bryophyta, Pteridophyta, Gymnosperm, Angiosperm

Microbes in Human welfare : Lactobacillus, Rhizobium, Yeast, Antibiotics - Penicillin, Clostridium, Some common viral/bacterial diseases

Herdity & variation : Heardity, Chromosome type, Str. Of DNA, Str. Of RNA, Mendel's monohybrid, dihybrid cross, Genetic disorder - Downs syndrome Klinefelter's Syndrome, Turners Syndrome, Monogenic disorder - Albinism, Sickle cell anaemia, Mitochondrial disorder, Polygenic disorders

Biotechnology : Tissure culture, Floriculture, nurseries & forestry, Agro-tourism

Evolution : Theories, Evidences, Darwin's theory, Lamark's theory, Speciation, Human evolution

Animal Classification : History, Traditional method, Basis of classification, Phylum porifera to chordata

Social health : Mental stress, Addiction, Chronic diseases, Cyber crimes, Stress management, Counselling



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**SCHOLARSHIP TEST SYLLABUS FOR 10th MOVING 11th
STUDENTS
MENTAL/GENERAL APTITUDE**

No Specific Syllabus

Questions will be asked on the content which can tentatively supposed to be known to the students upto 10th std and which can test the general/mental aptitude of the same level students.