

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, Solneoid), 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, Preception 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 organelies-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 heat, 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 propogation, 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, Pteredophyta, 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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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.