



## Revolution Test Series

**TARGET NEET-UG MAY 2019** (Total 25 Tests)

**10 Minor Tests + 5 Semi Major Tests + 10 Major Tests**

**Minor Test - 1**

**09<sup>th</sup> September 2018**

### BIOLOGY

**PRINCIPLES OF INHERITANCE AND VARIATION :** 1. Mendel's Laws of Inheritance, 2. Inheritance of One Gene, 3. Inheritance of Two Genes, 4. Sex Determination, 5. Mutation & 6. Genetic Disorders.

**MICROBES IN HUMAN WELFARE :** 1. Microbes in Household Products, 2. Microbes in Industrial Products, 3. Microbes in Sewage Treatment, 4. Microbes in Production of Biogas, 5. Microbes as Biocontrol Agents & 5. Microbes as Biofertilisers.

**BIOTECHNOLOGY : PRINCIPLES AND PROCESSES :** 1. Principles of Biotechnology, 2. Tools of Recombinant DNA Technology & 3. Processes of Recombinant DNA Technology.

**BIOTECHNOLOGY AND ITS APPLICATIONS :** 1. Biotechnological Applications in Agriculture, 2. Biotechnological Applications in Medicine, 3. Transgenic Animals & 4. Ethical Issues.

### CHEMISTRY

**CHEMICAL KINETICS :** 1. Rate of a Chemical Reaction, 2. Factors Influencing Rate of a Reaction, 3. Integrated Rate Equations, 4. Pseudo First Order Reaction, 5. Temperature Dependence of the Rate of a Reaction & 6. Collision Theory of Chemical Reactions.

**EQUILIBRIUM :** 1. Equilibrium in Physical Processes, 2. Equilibrium in Chemical Processes - Dynamic Equilibrium, 3. Law of Chemical Equilibrium and Equilibrium Constant, 4. Homogeneous Equilibria, 5. Heterogeneous Equilibria, 6. Applications of Equilibrium Constants, 7. Relationship between Equilibrium Constant K, Reaction Quotient Q and Gibbs Energy G, 8. Factors Affecting Equilibria, 9. Ionic Equilibrium in Solution, 10. Acids, Bases and Salts, 11. Ionization of Acids and Bases, 12. Buffer Solutions & 13. Solubility Equilibria of Sparingly Soluble Salts.

### PHYSICS

**WORK, ENERGY AND POWER :** 1. Introduction, 2. Notions of work and kinetic energy : The work-energy theorem, 3. Work, 4. Kinetic energy, 5. Work done by a variable force, 6. The work-energy theorem for a variable force, 7. The concept of potential energy, 8. The conservation of mechanical energy, 9. The potential energy of a spring, 10. Various forms of energy : the law of conservation of energy, 11. Power.

**CIRCULAR MOTION :**

**MOVING CHARGES AND MAGNETISM :** 1. Introduction, 2. Magnetic Force, 3. Motion in a Magnetic Field, 4. Motion in Combined Electric and Magnetic Fields, 5. Magnetic Field due to a Current Element, Biot-Savart Law, 6. Magnetic Field on the Axis of a Circular Current Loop, 7. Ampere's Circuital Law, 8. The Solenoid and the Toroid, 9. Force between Two Parallel Currents, the Ampere, 10. Torque on Current Loop, Magnetic Dipole & 11. The Moving Coil Galvanometer.

**MAGNETISM AND MATTER :** 1. Introduction, 2. The Bar Magnet, 3. Magnetism and Gauss's Law, 4. The Earth's Magnetism, 5. Magnetisation and Magnetic Intensity, 6. Magnetic Properties of Materials & 7. Permanent Magnets and Electromagnets.

**Minor Test - 2**

**23<sup>rd</sup> September 2018**

### BIOLOGY

**MOLECULAR BASIS OF INHERITANCE :** 1. The DNA, 2. The Search for Genetic Material, 3. RNA World, Replication, 4. Transcription, 5. Genetic Code, 6. Translation, 7. Regulation of Gene Expression, 8. Human Genome Project & 9. DNA Fingerprinting.

**CYTOLOGY : CELL :** 1. The Unit of Life : What is a Cell, 2. Cell Theory, 3. An Overview of Cell, 4. Prokaryotic Cells

& 5. Eukaryotic Cells.

**BIOMOLECULES :** 1. How to Analyse Chemical Composition?, 2. Primary and Secondary Metabolites, 3. Biomacromolecules, 4. Proteins, 5. Polysaccharides, 6. Nucleic Acids, 7. Structure of Proteins, 8. Nature of Bond Linking Monomers in a Polymer, 9. Dynamic State of Body Constituents - Concept of Metabolism, 10. Metabolic Basis for Living, 11. The Living State & 12. Enzymes.

**CELL CYCLE AND CELL DIVISION :** 1. Cell Cycle, 2. M-Phase, 3. Significance of Mitosis, 4. Meiosis & 5. Significance of Meiosis.

**BIOLOGY AND HUMAN WELFARE : STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION :** 1. Animal Husbandry, 2. Plant Breeding, 3. Single Cell Proteins & 4. Tissue Culture.

## CHEMISTRY

**SURFACE CHEMISTRY :** 1. Adsorption, 2. Catalysis, 3. Colloids, 4. Classification of Colloids, 5. Emulsions & 6. Colloids Around Us.

**SOME BASIC CONCEPTS OF CHEMISTRY :** 1. Importance of Chemistry, 2. Nature of Matter, 3. Properties of Matter and their Measurement, 4. Uncertainty in Measurement, 5. Laws of Chemical Combinations, 6. Dalton's Atomic Theory, 7. Atomic and Molecular Masses, 8. Mole concept and Molar Masses, 9. Percentage Composition & 10. Stoichiometry and Stoichiometric Calculations.

**THERMODYNAMICS :** 1. Thermodynamic State, 2. Applications, 3. Measurement of  $\Delta U$  and  $\Delta H$ : Calorimetry, 4. Enthalpy Change,  $\Delta_r H$  of a Reaction, 5. Enthalpies for Different Types of Reactions, 6. Spontaneity & 7. Gibbs Energy Change and Equilibrium.

## PHYSICS

**COLLISION AND CENTRE MASS :**

**ELECTROMAGNETIC INDUCTION :** 1. Introduction, 2. The Experiments of Faraday and Henry, 3. Magnetic Flux, 4. Faraday's Law of Induction, 5. Lenz's Law and Conservation of Energy, 6. Motional Electromotive Force, 7. Energy Consideration: A Quantitative Study, 8. Eddy Currents, 9. Inductance & 10. AC Generator.

**Minor Test - 3**

**07<sup>th</sup> October 2018**

## BIOLOGY

**PLANT PHYSIOLOGY :**

**TRANSPORT IN PLANTS :** 1. Means of Transport, 2. Plant-Water Relations, 3. Long Distance Transport of Water, 4. Transpiration, 5. Uptake and Transport of Mineral Nutrients & 6. Phloem Transport: Flow from Source to Sink.

**MINERAL NUTRITION :** 1. Methods to Study the Mineral Requirements of Plants, 2. Essential Mineral Elements, 3. Mechanism of Absorption of Elements, 4. Translocation of Solutes, 5. Soil as Reservoir of Essential Elements & 6. Metabolism of Nitrogen.

**PHOTOSYNTHESIS IN HIGHER PLANTS :** 1. What do we Know?, 2. Early Experiments, 3. Where does Photosynthesis take place?, 4. How many Pigments are involved in Photosynthesis?, 5. What is Light Reaction?, 6. The Electron Transport, 7. Where are the ATP and NADPH Used?, 8. The  $C_4$  Pathway, 9. Photorespiration & 10. Factors affecting Photosynthesis.

**RESPIRATION IN PLANTS :** 1. Do Plants Breathe?, 2. Glycolysis, 3. Fermentation, 4. Aerobic Respiration, 5. The Respiratory Balance Sheet, 6. Amphibolic Pathway & 7. Respiratory Quotient.

**PLANT GROWTH AND DEVELOPMENT :** 1. Growth, 2. Differentiation, 3. Dedifferentiation and Redifferentiation, 4. Development, 5. Plant Growth Regulators, 6. Photoperiodism & 7. Vernalisation.

## CHEMISTRY

**REDOX REACTIONS :** 1. Classical Idea of Redox Reactions-Oxidation and Reduction Reactions, 2. Redox Reactions in Terms of Electron Transfer Reactions, 3. Oxidation Number & 4. Redox Reactions and Electrode Processes.

**HYDROGEN :** 1. Position of Hydrogen in the Periodic Table, 2. Dihydrogen,  $H_2$ , 3. Preparation of Dihydrogen,  $H_2$ , 4. Properties of Dihydrogen, 5. Hydrides, 6. Water, 7. Hydrogen Peroxide ( $H_2O_2$ ), 8. Heavy Water,  $D_2O$  & 9. Dihydrogen as a Fuel.

**GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF ELEMENTS :** 1. Occurrence of Metals, 2. Concentration of Ores, 3. Extraction of Crude Metal from Concentrated Ore, 4. Thermodynamic Principles of Metallurgy, 5. Electrochemical Principles of Metallurgy, 6. Oxidation Reduction, 7. Refining & 8. Uses of Aluminium, Copper, Zinc and Iron.

**THE p-BLOCK ELEMENTS-1 :** 1. Group 13 Elements : The Boron Family, 2. Important Trends and Anomalous Properties of Boron, 3. Some Important Compounds of Boron, 4. Uses of Boron and Aluminium and their Compounds, 5. Group 14 Elements: The Carbon Family, 6. Important Trends and Anomalous Behaviour of Carbon, 7. Allotropes of Carbon & 8. Some Important Compounds of Carbon and Silicon.

**THE p-BLOCK ELEMENTS-2 :** 1. Group 15 Elements, 2. Dinitrogen, 3. Ammonia, 4. Oxides of Nitrogen, 5. Nitric Acid, 6. Phosphorus – Allotropic Forms, 7. Phosphine, 8. Phosphorus Halides, 9. Oxoacids of Phosphorus, 10. Group 16 Elements, 11. Dioxygen, 12. Simple Oxides, 13. Ozone, 14. Sulphur – Allotropic Forms, 15.

Sulphur Dioxide, 16. Oxoacids of Sulphur, 17. Sulphuric Acid, 18. Group 17 Elements, 19. Chlorine, 20. Hydrogen Chloride, 21. Oxoacids of Halogens, 22. Interhalogen Compounds & 23. Group 18 Elements.

## PHYSICS

**SYSTEM OF PARTICLES AND ROTATIONAL MOTION :** 1. Introduction, 2. Linear momentum of a system of particles, 3. Vector product of two vectors, 4. Angular velocity and its relation with linear velocity, 5. Torque and angular momentum, 6. Equilibrium of a rigid body, 7. Moment of inertia, 8. Theorems of perpendicular and parallel axes, 9. Kinematics of rotational motion about a fixed axis, 10. Dynamics of rotational motion about a fixed axis, 11. Angular momentum in case of rotations about a fixed axis & 12. Rolling motion.

**ALTERNATING CURRENT :** 1. Introduction, 2. AC Voltage Applied to a Resistor, 3. Representation of AC Current and Voltage by Rotating Vectors — Phasors, 4. AC Voltage Applied to an Inductor, 5. AC Voltage Applied to a Capacitor, 6. AC Voltage Applied to a Series LCR Circuit, 7. Power in AC Circuit : The Power Factor, 8. LC Oscillations & 9. Transformers.

**ELECTROMAGNETIC WAVES :** 1. Introduction, 2. Displacement Current, 3. Electromagnetic Waves & 4. Electromagnetic Spectrum.

**Semi Major Test-1**

**21/10/2018**

**Syllabus of Minor Test-1 to 3**

**Minor Test - 4**

**04<sup>th</sup> November 2018**

## BIOLOGY

**GENETICS : EVOLUTION :** 1. Origin of Life, 2. Evolution of Life Forms - A Theory, 3. What are the Evidences for Evolution?, 4. What is Adaptive Radiation?, 5. Biological Evolution, 6. Mechanism of Evolution, 7. Hardy - Weinberg Principle, 8. A Brief Account of Evolution & 9. Origin and Evolution of Man.

**BIOLOGY AND HUMAN WELFARE : HUMAN HEALTH AND DISEASE :** 1. Common Diseases in Humans, 2. Immunity, 3. AIDS, Cancer & 4. Drugs and Alcohol Abuse.

## CHEMISTRY

**ORGANIC CHEMISTRY – SOME BASIC PRINCIPLES AND TECHNIQUES :** 1. General Introduction, 2. Tetravalence of Carbon: Shapes of Organic Compounds, 3. Structural Representations of Organic Compounds, 4. Classification of Organic Compounds, 5. Nomenclature of Organic Compounds, 6. Isomerism, 7. Fundamental Concepts in Organic Reaction Mechanism, 8. Methods of Purification of Organic Compounds, 9. Qualitative Analysis of Organic Compounds & 10. Quantitative Analysis.

**HYDROCARBONS :** 1. Classification, 2. Alkanes, 3. Alkenes, 4. Alkynes, 5. Aromatic Hydrocarbon & 6. Carcinogenicity and Toxicity.

**HALOALKANES AND HALOARENES :** 1. Classification, 2. Nomenclature, 3. Nature of C–X Bond, 4. Methods of Preparation, 5. Physical Properties, 6. Chemical Reactions & 7. Polyhalogen Compounds.

## PHYSICS

**THERMAL PROPERTIES OF MATTER :** 1. Introduction, 2. Temperature and heat, 3. Measurement of temperature, 4. Ideal-gas equation and absolute temperature, 5. Thermal expansion, 6. Specific heat capacity, 7. Calorimetry, 8. Change of state, 9. Heat transfer & 10. Newton's law of cooling.

**KINETIC THEORY :** 1. Introduction, 2. Molecular nature of matter, 3. Behaviour of gases, 4. Kinetic theory of an ideal gas, 5. Law of equipartition of energy, 6. Specific heat capacity & 7. Mean free path.

**THERMODYNAMICS :** 1. Introduction, 2. Thermal equilibrium, 3. Zeroth law of thermodynamics, 4. Heat, internal energy and work, 5. First law of thermodynamics, 6. Specific heat capacity, 7. Thermodynamic state variables and equation of state, 8. Thermodynamic processes, 9. Heat engines, 10. Refrigerators and heat pumps, 11. Second law of thermodynamics, 12. Reversible and irreversible processes & 13. Carnot engine.

**RAY OPTICS AND OPTICAL INSTRUMENTS :** 1. Introduction, 2. Reflection of Light by Spherical Mirrors, 3. Refraction, 4. Total Internal Reflection, 5. Refraction at Spherical Surfaces and by Lenses, 6. Refraction through a Prism, 7. Dispersion by a Prism, 8. Some Natural Phenomena due to Sunlight & 9. Optical Instruments.

**Minor Test - 5**

**18<sup>th</sup> November 2018**

## BIOLOGY

**HUMAN PHYSIOLOGY :**

**DIGESTION AND ABSORPTION :** 1. Digestive System, 2. Digestion of Food, 3. Absorption of Digested Products & 4. Disorders of Digestive System.

**BREATHING & EXCHANGE OF GASES :** 1. Respiratory Organs, 2. Mechanism of Breathing, 3. Exchange of Gases, 4. Transport of Gases, 5. Regulation of Respiration & 6. Disorders of Respiratory System.

**BODY FLUIDS AND CIRCULATION :** 1. Blood, 2. Lymph (Tissue Fluid), 3. Circulatory Pathways, 4. Double Circulation, 5. Regulation of Cardiac Activity & 6. Disorders of Circulatory System.

**EXCRETORY PRODUCTS & THEIR ELIMINATION :** 1. Human Excretory System, 2. Urine Formation, 3.

Function of the Tubules, 4. Mechanism of Concentration of the Filtrate, 5. Regulation of Kidney Function, 6. Micturition, 7. Role of other Organs in Excretion & 8. Disorders of the Excretory System.

## CHEMISTRY

**COORDINATION COMPOUNDS :** 1. Werner's Theory of Coordination Compounds, 2. Definition of Some Important Terms Pertaining to Coordination Compounds, 3. Nomenclature of Coordination Compounds, 4. Isomerism in Coordination Compounds, 5. Bonding in Coordination Compounds, 6. Bonding in Metal Carbonyls, 7. Stability of Coordination Compounds & 8. Importance and Applications of Coordination Compounds.

**THE d-AND f-BLOCK ELEMENTS :** 1. Position in the Periodic Table, 2. Electronic Configurations of the d-Block Elements, 3. General Properties of the Transition Elements (d-Block), 4. Some important Compounds of Transition Elements, 5. The Lanthanoids, 6. The Actinoids & 7. Some Applications of d-and f-Block Elements.

**THE s-BLOCK ELEMENTS :** 1. Group 1 Elements: Alkali Metals, 2. General Characteristics of the Compounds of the Alkali Metals, 3. Anomalous Properties of Lithium, 4. Some Important Compounds of Sodium, 5. Biological Importance of Sodium and Potassium, 6. Group 2 Elements : Alkaline Earth Metals, 7. General Characteristics of Compounds of the Alkaline Earth Metals, 8. Anomalous Behaviour of Beryllium, 9. Some Important Compounds of Calcium & 10. Biological Importance of Magnesium and Calcium.

## PHYSICS

**MECHANICAL PROPERTIES OF SOLIDS :** 1. Introduction, 2. Elastic behaviour of solids, 3. Stress & strain, 4. Hook's law, 5. Stress-strain curve, 6. Elastic moduli & 7. Applications of elastic behaviour of materials.

**MECHANICAL PROPERTIES OF FLUIDS :** 1. Introduction, 2. Pressure, 3. Streamline flow, 4. Bernoulli's principle, 5. Viscosity, 6. Reynolds number & 7. Surface tension.

**WAVE OPTICS :** 1. Introduction, 2. Huygens Principle, 3. Refraction and reflection of plane waves using Huygens Principle, 4. Coherent and Incoherent Addition of Waves, 5. Interference of Light Waves and Young's Experiment, 6. Diffraction & 7. Polarisation.

**Minor Test - 6**

**02<sup>th</sup> December 2018**

## BIOLOGY

**ECOLOGY : ORGANISMS AND POPULATIONS :** 1. Organism and its Environment & 2. Populations.

**ECOSYSTEM :** 1. Ecosystem-Structure and Function, 2. Productivity, 3. Decomposition, 4. Energy Flow, 5. Ecological Pyramids, 6. Ecological Succession, 7. Nutrient Cycling & 8. Ecosystem Services.

**BIODIVERSITY AND CONSERVATION :** 1. Biodiversity & 2. Biodiversity Conservation.

**ENVIRONMENTAL ISSUES :** 1. Air Pollution and its Control, 2. Water Pollution and its Control, 3. Solid Wastes, 4. Agro-chemicals and their Effects, 5. Radioactive Wastes, 6. Greenhouse Effect and Global Warming, 7. Ozone Depletion in the Stratosphere, 8. Degradation by Improper Resource Utilisation and Maintenance & 9. Deforestation.

## CHEMISTRY

**ALCOHOLS, PHENOLS AND ETHERS :** 1. Classification, 2. Nomenclature, 3. Structures of Functional Groups, 4. Alcohols and Phenols, 5. Some Commercially Important Alcohols & 6. Ethers.

**ALDEHYDES, KETONES AND CARBOXYLIC ACIDS :** 1. Nomenclature and Structure of Carbonyl Group, 2. Preparation of Aldehydes and Ketones, 3. Physical Properties, 4. Chemical Reactions, 5. Uses of Aldehydes and Ketones, 6. Nomenclature and Structure of Carboxyl Group, 7. Methods of Preparation of Carboxylic Acids, 8. Physical Properties, 9. Chemical Reactions & 10. Uses of Carboxylic Acids.

**ENVIRONMENTAL CHEMISTRY :** 1. Environmental Pollution, 2. Atmospheric Pollution, 3. Water Pollution, 4. Soil Pollution, 5. Industrial Waste, 6. Strategies to control Environmental Pollution & 7. Green Chemistry.

## PHYSICS

**GRAVITATION :** 1. Introduction, 2. Kepler's laws, 3. Universal law of gravitation, 4. The gravitational constant, 5. Acceleration due to gravity of the earth, 6. Acceleration due to gravity below and above the surface of earth, 7. Gravitational potential energy, 8. Escape speed, 9. Earth satellite, 10. Energy of an orbiting satellite, 11. Geostationary and polar satellites & 12. Weightlessness.

**OSCILLATIONS :** 1. Introduction, 2. Periodic and oscillatory motions, 3. Simple harmonic motion, 4. Simple harmonic motion and uniform circular motion, 5. Velocity and acceleration in simple harmonic motion, 6. Force law for simple harmonic motion, 7. Energy in simple harmonic motion, 8. Some systems executing Simple Harmonic Motion, 9. Damped simple harmonic motion & 10. Forced oscillations and resonance.

**DUAL NATURE OF RADIATION AND MATTER :** 1. Introduction, 2. Electron Emission, 3. Photoelectric Effect, 4. Experimental Study of Photoelectric Effect, 5. Photoelectric Effect and Wave Theory of Light, 6. Einstein's Photoelectric Equation: Energy Quantum of Radiation, 7. Particle Nature of Light: The Photon, 8. Wave Nature of Matter & 9. Davisson and Germer Experiment.

**NUCLEI :** 1. Introduction, 2. Atomic Masses and Composition of Nucleus, 3. Size of the Nucleus, 4. Mass Energy and Nuclear Binding Energy, 5. Nuclear Force, 6. Radioactivity & 7. Nuclear Energy.

**ATOMS :** 1. Introduction, 2. Alpha-particle Scattering and Rutherford's Nuclear Model of Atom, 3. Atomic Spectra, 4. Bohr Model of the Hydrogen Atom, 5. The Line Spectra of the Hydrogen Atom & 6. DE Broglie's Explanation of Bohr's Second Postulate of Quantisation.

**BIOLOGY****HUMAN PHYSIOLOGY :**

**LOCOMOTION AND MOVEMENT :** 1. Types of Movement, 2. Muscle, 3. Skeletal System, 4. Joints & 5. Disorders of Muscular and Skeletal System.

**NEURAL CONTROL AND COORDINATION :** 1. Neural System, 2. Human Neural System, 3. Neuron as Structural and Functional Unit of Neural System, 4. Central Neural System, 5. Reflex Action and Reflex Arc & 6. Sensory Reception and Processing

**CHEMICAL COORDINATION & INTEGRATION :** 1. Endocrine Glands & Hormones, 2. Human Endocrine System, 3. Hormones of Heart, Kidney and Gastrointestinal Tract & 4. Mechanism of Hormone Action.

**CHEMISTRY**

**AMINES :** 1. Structure of Amines, 2. Classification, 3. Nomenclature, 4. Preparation of Amines, 5. Physical Properties, 6. Chemical Reactions, 7. Method of Preparation of Diazonium Salts, 8. Physical Properties, 9. Chemical Reactions & 10. Importance of Diazonium Salts in Synthesis of Aromatic Compounds.

**BIOMOLECULES :** 1. Carbohydrates, 2. Proteins, 3. Enzymes, 4. Vitamins & 5. Nucleic Acids.

**POLYMERS :** 1. Classification of Polymers, 2. Types of Polymerisation, 3. Molecular Mass of Polymers, 4. Biodegradable Polymers & 5. Polymers of Commercial Importance.

**CHEMISTRY IN EVERYDAY LIFE :** 1. Drugs and their Classification, 2. Drug-Target Interaction, 3. Therapeutic Action of Different Classes of Drugs, 4. Chemicals in Food & 5. Cleansing Agents.

**STATES OF MATTER :** 1. Intermolecular Forces, 2. Thermal Energy, 3. Intermolecular Forces vs Thermal Interactions, 4. The Gaseous State, 5. The Gas Laws, 6. Ideal Gas Equation, 7. Kinetic Molecular Theory of Gases, 8. Behaviour of real gases : Deviation from Ideal Gas Behaviour, 9. Liquifaction of Gases & 10. Liquid State.

**LIQUID STATES****PHYSICS**

**WAVES :** 1. Introduction, 2. Transverse and longitudinal waves, 3. Displacement relation in a progressive wave, 4. The speed of a travelling wave, 5. The principle of superposition of waves, 6. Reflection of waves, 7. Beats & 8. Doppler effect.

**SEMICONDUCTOR ELECTRONICS : MATERIALS, DEVICES AND SIMPLE CIRCUITS :** 1. Introduction, 2. Classification of Metals, Conductors and Semiconductors, 3. Intrinsic Semiconductor, 4. Extrinsic Semiconductor, 5. p-n Junction, 6. Semiconductor diode, 7. Application of Junction Diode as a Rectifier, 8. Special Purpose p-n Junction Diodes, 9. Junction Transistor, 10. Digital Electronics and Logic Gates & 11. Integrated Circuits.

**COMMUNICATION SYSTEMS :** 1. Introduction, 2. Elements of a Communication System, 3. Basic Terminology Used in Electronic Communication Systems, 4. Bandwidth of Transmission medium, 6. Propagation of Electromagnetic Waves, 7. Modulation and its Necessity, 8. Amplitude Modulation, 9. Production of Amplitude Modulated Wave & 10. Detection of Amplitude Modulated Wave.

**BIOLOGY****REPRODUCTION :**

**REPRODUCTION IN ORGANISMS :** 1. Asexual Reproduction & 2. Sexual Reproduction.

**SEXUAL REPRODUCTION IN FLOWERING PLANTS :** 1. Flower – A Fascinating Organ of Angiosperms, 2. Pre-fertilisation : Structures and Events, 3. Double Fertilisation, 4. Post-fertilisation: Structures and Events & 5. Apomixis and Polyembryony.

**HUMAN REPRODUCTION :** 1. The Male Reproductive System, 2. The Female Reproductive System, 3. Gametogenesis, 4. Menstrual Cycle, 5. Fertilisation and Implantation, 6. Pregnancy and Embryonic Development & 7. Parturition and Lactation.

**REPRODUCTIVE HEALTH :** 1. Reproductive Health – Problems and Strategies, 2. Population Explosion and Birth Control, 3. Medical Termination of Pregnancy, 4. Sexually Transmitted Diseases & 5. Infertility.

**STRUCTURAL ORGANISATION IN PLANTS :**

**MORPHOLOGY OF FLOWERING PLANTS :** 1. The Root, 2. The Stem, 3. The Leaf, 4. The Inflorescence, 5. The Flower, 6. The Fruit, 7. The Seed, 5. Semi-technical Description of a Typical Flowering Plant & 9. Description of Some Important Families.

**ANATOMY OF FLOWERING PLANTS :** 1. The Tissues, 2. The Tissue System, 3. Anatomy of Dicotyledonous and Monocotyledonous Plants & 4. Secondary Growth.

## CHEMISTRY

**STRUCTURE OF ATOM :** 1. Sub-atomic Particles, 2. Atomic Models, 3. Developments Leading to the Bohr's Model of Atom, 4. Bohr's Model for Hydrogen Atom, 5. Towards Quantum Mechanical Model of the Atom & 6. Quantum Mechanical Model of Atom.

**THE SOLID STATE :** 1. General Characteristics of Solid State, 2. Amorphous and Crystalline Solids, 3. Classification of Crystalline Solids, 4. Crystal Lattices and Unit Cells, 5. Number of Atoms in a Unit Cell, 6. Close-Packed Structures, 7. Packing Efficiency, 8. Calculations Involving Unit Cell Dimensions, 9. Imperfections in Solids, 10. Electrical Properties & 11. Magnetic Properties.

## PHYSICS

**BASIC METHOD USED IN PHYSICS :**

**PHYSICAL WORLD :** 1. What is physics, 2. Scope and excitement of physics, 3. Physics, technology and society, 4. Fundamental forces in nature & 5. Nature of physical laws.

**UNITS AND MEASUREMENTS :** 1. Introduction, 2. The international system of units, 3. Measurement of length, 4. Measurement of mass, 5. Measurement of time, 6. Accuracy, precision of instruments and errors in measurement, 7. Significant figures, 8. Dimensions of physical quantities, 9. Dimensional formulae and dimensional equations & 10. Dimensional analysis and its applications.

**VECTORS :** 1. Introduction, 2. Scalars and vectors, 3. Multiplication of vectors by real numbers, 4. Addition and subtraction of vectors – graphical method, 5. Resolution of vectors & 6. Vector addition – analytical method.

**ELECTRIC CHARGES, FIELDS AND POTENTIALS :** 1. Introduction, 2. Electric Charges, 3. Conductors and Insulators, 4. Charging by Induction, 5. Basic Properties of Electric Charge, 6. Coulomb's Law, 7. Forces between Multiple Charges, 8. Electric Field, 9. Electric Field Lines, 10. Electric Flux, 11. Electric Dipole, 12. Dipole in a Uniform External Field, 13. Continuous Charge Distribution, 14. Gauss's Law, 15. Application of Gauss's Law, 16. Electrostatic Potential, 17. Potential due to a Point Charge, 18. Potential due to an Electric Dipole, 19. Potential due to a System of Charges, 20. Equipotential Surfaces, 21. Potential Energy of a System of Charges, 22. Potential Energy in an External Field, 23. Electrostatics of Conductors & 24. Dielectrics and Polarisation.

**Semi Major Test-3**

**20/01/2019**

**Syllabus of Minor Test-1 to 8**

**Minor Test - 9**

**27<sup>th</sup> January 2019**

## BIOLOGY

**THE LIVING WORLD :** 1. What is 'Living'?, 2. Diversity in the Living World, 3. Taxonomic Categories & 4. Taxonomical Aids.

**BIOLOGICAL CLASSIFICATION :** 1. Kingdom Monera, 2. Kingdom Protista, 3. Kingdom Fungi, 4. Kingdom Plantae, 5. Kingdom Animalia & 6. Viruses, Viroids and Lichens

## CHEMISTRY

**SOLUTIONS :** 1. Types of Solutions, 2. Expressing Concentration of Solutions, 3. Solubility, 4. Vapour Pressure of Liquid Solutions, 5. Ideal and Non-ideal Solutions, 6. Colligative Properties and Determination of Molar Mass & 7. Abnormal Molar Masses.

**CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES :** 1. Why do we need to Classify Elements?, 2. Genesis of Periodic Classification, 3. Modern Periodic Law and the present form of the Periodic Table, 4. Nomenclature of Elements with Atomic Number > 100, 5. Electronic Configurations of Elements and the Periodic Table, 6. Electronic Configurations and Types of Elements : s, p, d, f-Blocks & 7. Periodic Trends in Properties of Elements.

## PHYSICS

**KINEMATICS :**

**MOTION IN A STRAIGHT LINE :** 1. Introduction, 2. Position, path length and displacement, 3. Average velocity and average speed, 4. Instantaneous velocity and speed, 5. Acceleration, 6. Kinematic equations for uniformly accelerated motion & 7. Relative velocity.

**MOTION IN A PLANE :** 7. Motion in a plane, 8. Motion in a plane with constant acceleration, 9. Relative velocity in two dimensions, 10. Projectile motion.

**CURRENT ELECTRICITY :** 1. Introduction, 2. Electric Current, 3. Electric Currents in Conductors, 4. Ohm's law, 5. Drift of Electrons and the Origin of Resistivity, 6. Limitations of Ohm's Law, 7. Resistivity of various Materials, 8. Temperature Dependence of Resistivity, 9. Electrical Energy, Power, 10. Combination of Resistors — Series and Parallel, 11. Cells, emf, Internal Resistance, 12. Cells in Series and in Parallel, 13. Kirchhoff's Laws, 14. Wheatstone Bridge, 15. Meter Bridge & 16. Potentiometer.

**BIOLOGY**

**ANIMAL KINGDOM :** 1. Basis of Classification & 2. Classification of Animals.

**STRUCTURAL ORGANISATION IN ANIMALS :** 1. Animal Tissues, 2. Organ and Organ System, 3. Earthworm, 4. Cockroach & 5. Frogs.

**PLANT KINGDOM :** 1. Algae, 2. Bryophytes, 3. Pteridophytes, 4. Gymnosperms, 5. Angiosperms & 6. Plant Life Cycles and Alternation of Generations.

**CHEMISTRY**

**CHEMICAL BONDING AND MOLECULAR STRUCTURE :** 1. Kossel-Lewis Approach to Chemical Bonding, 2. Ionic or Electrovalent Bond, 3. Bond Parameters, 4. The Valence Shell Electron Pair Repulsion (VSEPR) Theory, 5. Valence Bond Theory, 6. Hybridisation, 7. Molecular Orbital Theory, 8. Bonding in Some Homonuclear Diatomic Molecules & 9. Hydrogen Bonding.

**ELECTROCHEMISTRY :** 1. Electrochemical Cells, 2. Galvanic Cells, 3. Nernst Equation, 4. Conductance of Electrolytic Solutions, 5. Electrolytic Cells and Electrolysis, 6. Batteries, 7. Fuel Cells & 8. Corrosion.

**PHYSICS**

**LAWS OF MOTION :** 1. Introduction, 2. Aristotle's fallacy, 3. The law of inertia, 4. Newton's first law of motion, 5. Newton's second law of motion, 6. Newton's third law of motion, 7. Conservation of momentum, 8. Equilibrium of a particle, 9. Common forces in mechanics.

**FRICTION :**

**CAPACITOR :** 1. Capacitors and Capacitance, 2. The Parallel Plate Capacitor, 3. Effect of Dielectric on Capacitance, 4. Combination of Capacitors, 5. Energy Stored in a Capacitor & 6. Van de Graaff Generator.

**Semi Major Test-4****10/02/2019****Half Syllabus/Syllabus of Class-XI****Semi Major Test-5****17/02/2019****Half Syllabus/Syllabus of Class-XII****FULL SYLLABUS MAJOR TESTS****Major Test - 1****24/02/2019****FULL Syllabus****Major Test - 2****03/03/2019****FULL Syllabus****Major Test - 3****10/03/2019****FULL Syllabus****Major Test - 4****17/03/2019****FULL Syllabus****Major Test - 5****24/03/2019****FULL Syllabus****Major Test - 6****31/03/2019****FULL Syllabus****Major Test - 7****07/04/2019****FULL Syllabus****Major Test - 8****14/04/2019****FULL Syllabus****Major Test - 9****21/04/2019****FULL Syllabus****Major Test - 10****28/04/2019****FULL Syllabus**

 1st Floor, Pratap Bhawan, Behind Leela Cinema, Hazratganj, Lucknow-226001

 9453-582-582, 8400-582-582, 0522-4109-582