Module wise Study Plan

Module	Physics	Chemistry	Biology
Module I	Average Velocity-Equal Displacements	Laws of Chemical Combinations	Diversity In The Living World
	Kinematic Equations for Uniformly Accelerated Motion	Mole Concept and Molar Masses	Taxonomic Categories
	Free Fall Motion	Percentage Composition	Biodiversity
	Dimensional Formulae and Dimensional Equations	Stoichiometry and Stoichiometric Calculations	Biodiversity Conservation
	Position, Path Length and Displacement		
	Velocity Time Graph		
	Position Time Graph		
	Shape of Curves		
	Acceleration Time Graph		
	Relative Velocity		
	Significant Figures		
	Accuracy, Precision of Instruments and Errors in Measurement		
	Dimensional Analysis and its Applications		
	Measurement of Length		
Module 2	Unit Vector	Sub-atomic Particles	Kingdom Monera
	Position Vector	Developments Leading to the Bohr's Model of Atom - Part I	Kingdom Fungi
	Vector Addition - Analytical Method	Developments Leading to the Bohr's Model of Atom - Part II	Kingdom Protista
	Vector Subtraction - Analytical method	Developments Leading to the Bohr's Model of Atom - Part III	Viruses, Viroids and Lichens
	Relative velocity in One and Two Dimensions	Bohr's Model for Hydrogen Atom	
	Resolution of Vectors	Towards Quantum Mechanical Model of the Atom	
	Multiplication of Two Vectors	Quantum Mechanical Model of the Atom	
	Crossing River Problems	Bond Parameters	
	Projectile Motion	The Valence Shell Electron Pair Repulsion(VSEPR) Theory	
	Expressions for Time of Flight, Range and Maximum Height	Valence Bond Theory	
	Two Angles Giving The same Range and Connected Relations	Hybridization	
	Equations of Tragectory	Molecular Orbital Theory	
	Kinetic Energy And Angular Momentum of Projectiles	Hydrogen Bonding	
	Centripetal Acceleration And Centripetal Force		
	Banking At Curves		
	Vertical Circular Motion		
	Scalars and Vectors		
	Angular Displacement, Angular Velocity and Angular Acceleration		
	Uniform Circular Motion		

	Newton's Second Law of Motion	The Gas Laws	Basis of Classification
	Motion of Connected Systems And Bodies in Contact	Ideal Gas Equation	Classification of Animals
	Newton's Third Law of Motion	Kinetic Molecular Theory of Gases	
	Equilibrium of Concurrent Forces	Behavior of Real Gases: Deviation from Ideal Gas Behavior	
	Friction	Calculations Involving Unit Cell Dimensions	
	Newton's First Law of Motion	Imperfections in Solids	
	Circular Motion		
Module 3	Conservation of Momentum		
Module 4	Cumulative test based on Module 1,2,3	Cumulative test based on Module 1,2,3	Cumulative test based on Module 1,2,3
	Work	Expressing Concentration of Solutions	Algae
	Work Done by a Variable Force	Solubility	Bryophytes
	Special Cases of Work Done	Vapour Pressure and Liquid Solutions	Pteridophytes
	Power	Ideal and non Ideal Solutions	Plant Life Cycles and Alternation of Generations
	The Concept of Potential Energy	Colligative Properties and Determination of Molar Mass - Part I	Gymnosperms
	The Concept of Kinetic Energy	Colligative Properties and Determination of Molar Mass - Part II	Angiosperms
	Kinetic Energy and Momentum	Abnormal Molar Masses	
	The Work-Energy Theorem		
	The Conservation of Energy		
	The Potential Energy of a Spring		
	Collisions		
Module 5	Conservative and Non Conservative Forces		
	Center of Mass	Thermodynamics - Applications	Anatomy of Dicotyledonous and Monocotyledonous Plants
	Torque and Angular Momentum	Measurement of Delta U & Delta H: Calorimetry	The Root
	Equilibrium of Parallel Forces	Enthalpies for Different Types of Reactions	Uptake and Transport of Mineral Nutrients
	Moment of Inertia	Spontaneity	The Stem
	Theorems of Perpendicular and Parallel Axes	Gibbs Energy Change and Equilibrium	The Leaf
	Kinetic Energy, Torque and Angular Momentum of a Rotating Rigid Body		Transpiration
	Conservation of Angular Momentum		Plant - Water Relations
	Rolling Motion, Kinetic Energy Due to Translation and Rotation		Long Distance Transport of Water
Module 6	Kinematics of Rotational Motion about a Fixed Axis		
	Kepler's Laws	Law of Chemical Equilibrium and Equilibrium Constant	The Inflorescence
	Universal Law of Gravitation	Applications of Equilibrium Constant	The Flower
	Acceleration Due to Gravity of the Earth	Factors Affecting Equilibria	Pre-fertilization: Structures and Events

	Variation of Acceleration Due to Gravity - Due to Shape, Altitude, Depth and Rotation of Earth	Ionic Equilibrium in Solution	Post-fertilization: Structures and Events
	Intensity and Potential in a Gravitational Field	Acids, bases and salts	The Fruit
	Orbital Velocity, Period of a Satellite and Energy of an Orbiting Satellite	Ionization of acids and bases	The Seed
	Gravitational Potential Energy of A System of Particles	Solubility and Solubility Product	Apomixis and Polyembryony
	Escape Speed		
Module 7	Geostationary and Polar Satellites		
Module 8	Cumulative test based on Module 5,6,7	Cumulative test based on Module 5,6,7	Cumulative test based on Module 5,6,7
	Stress and Strain	Rate of a chemical reaction	Ecosystem - Structure and Function
	Elastic Moduli	Factors Influencing Rate of a Reaction	Pigments Involved in Photosynthesis
	Pressure and Buoyancy	Integrated Rate Equations	Light Reaction
	Surface Tension	Temperature Dependence of the Rate of a Reaction	ATP And NADPH Usage
	Surface Energy, Excess of Pressure	Collision Theory of Chemical Reactions	Electron Transport
	Capillarity		The C4 Pathway
	Continuity Equation		Photoperiodism
	Reynolds Number		Productivity
	Bernoulli's Principle		
	Viscosity		
	Stokes Formula and Terminal Velocity		
Module 9	Elastic Behaviour Of Solids		
	Measurement of Temperature	Oxidation Number	Glycolysis
	Thermal Expansion	Redox Reactions and Electrode Processes	Fermentation
	Specific Heat Capacity	Galvanic Cells	Eukaryotic Cells
	Change of State	Nernst Equation	Aerobic Respiration
	Heat Transfer - Conduction, Convection and Radiation	Conductance of Electrolytic Solutions	Respiratory Quotient
	Newton's Law of Cooling	Electrolytic Cells and Electrolysis	
	Calorimetry	Fuel cells	
Module 10		Corrosion	
	First Law of Thermodynamics	Adsorption	Cell Theory
	Thermodynamic Processes	Catalysis	Prokaryotic Cells
	Heat Engines	Colloids	Eukaryotic Cells
	Carnot Engine	Atmospheric pollution	Biomacromolecules
	Refrigerators and Heat Pumps		Metabolic Basis for Living
	Behaviour of Gases and Gas Equations		Enzymes
	Kinetic Theory of an Ideal Gas and Expression for Pressure		
	RMS Velocity		
	Mean Free Path		
	Thermal Equilibrium		
	Zeroth Law of Thermodynamics		
	Heat, Internal Energy and Work		
Module 11	Specific Heat Capacity of Gases		
Module 12	Cumulative Test based on Module 9,10,11	Cumulative Test based on Module 9,10,11	Cumulative Test based on Module 9,10,11

	Simple Harmonic Motion	Electronic Configurations and Types of Elements: s, p, d, f - Blocks	Animal Tissues
	Velocity and Acceleration in Simple Harmonic Motion	Periodic Trends in Properties of Elements	Basis of Classification
	Energy in Simple Harmonic Motion	Occurrence of Metals	
	Some Systems Executing Simple Harmonic Motion	Concentration of Ores	
	Simple Pendulum	Extraction of Crude Metal from Concentrated Ore	
	Damped Simple Harmonic Motion	Thermodynamic Principles of Metallurgy	
	Transverse and Longitudinal Waves	Electrochemical Principles of Metallurgy	
	The Speed of a Travelling Wave	Oxidation- Reduction	
	Velocity of Sound in Air and Variation with Pressure, Temperature and Humidity	Refining	
	Displacement Relation in a Progressive Wave		
	Stationary Wave, Fundamental Frequency and Harmonics		
	Vibrations of Stretched Strings		
	Vibrations of Air Columns		
	Beats		
	Doppler Effect		
Module 13	Reflection of Waves		
	Basic Properties of Electric Charge	Occurrence and Isotopes of Hydrogen	Animal Tissues
	Charging by Induction	Hydrogen - Preparation	Frogs
	Coulomb's Law	Hydrogen - Properties	Earthworm
	Forces Between Multiple Charges	Hydrides	Cockroach
	Electric Field - Intensity And Potential	Water	
	Electric Flux	Hydrogen Peroxide	
	Electric Dipole	Heavy Water	
	Dipole in a Uniform and Non-Uniform External Field	Group 1 Elements: Alkali Metals	
	Gauss's Law	Group 2 elements: Alkaline Earth Metals	
	Applications of Gauss's Law		
	Electrostatic Potential and Potential Difference		
	Relation Between Intensity and Potential		
	Work Done in Moving Charge in an Electric Field		
	Potential Due to a Point Charge, Dipole and System of Charges		
	Potential Due to a Spherical Shell		
	Potential Energy of a System of Charges		
	Dielectrics		
	Capacitance and Capacitors		
	Capacitance of Isolated Spherical Conductors and Parallel Plate Capacitor		
	More About a Parallel Plate Capacitor		
	Capacitance in Series		

	Capacitors in Parallel		
	Energy Of a Charged Capacitor		
	Common Potential and Loss of Energy Due to Sharing		
	Coalition of Charged Identical Drops		
	Calculation of Equivalent Capacitance, Charge and Potential in Condensers in an Electrical Network		
	Electric Charges		
	Conductors and Insulators		
	Electric Field Lines		
	Equipotential Surface		
Module 14	Effect of Changing the Capacitance With and Without Battery Connection		
	Electric Current	Group 13 elements: The Boron Family	Origin of Life
	Electric Currents in Conductors	Group 14 elements: The Carbon family	Evidence for Evolution
	Thermal velocity and Drift velocity	Group 15 Elements - The Nitrogen Family	Biological Evolution
	Ohm's Law	Group 15 Nitrogen And Its Compounds	Adaptive Radiation
	Resistivity of Various Materials	Group 15 Phosphorus And Its Compounds	Hardy - Weinberg Principle
	Temperature Dependence of Resistivity	Group 16 Elements - The Oxygen Family	Evolution and Origin of Man
	Combination of Resistors-Series and Parallel	Group 16 Oxygen And Ozone	Ecological Succession
	Cells, Emf, Internal Resistance	Group 16 Sulphur And Its Compounds	
	Cells in Series and in Parallel	Group 17 Elements - The Halogens	
	Kirchhoff 's Laws	Group 17 Chlorine,Oxoacids of Halogens And Interhalogen Compound	
	Wheatstone's Bridge	Group 18 Elements - The Noble Gases	
	Metre Bridge		
	Potentiometer		
	Electrical Energy and Power		
	Resistance		
	Limitations of Ohm's Law		
Module 15	Current and Voltage Distribution in Electrical Circuits		
Module 16	Cumulative Test based on Module 13, 14, 15	Cumulative Test based on Module 13, 14, 15	Cumulative Test based on Module 13, 14, 15
	Biot- Savart's Law	General Properties of the Transition Elements(d-block)-Part 1	Digestive System
	Ampere's Circuital Law	General Properties of the Transition Elements(d-block)-Part 2	Respiratory Organs
	Magnetic Field Due to Straight Conductor, Circular Coil, Solenoid and Toroid	Some Important Compounds of Transition Elements	Exchange of Gases

	Force on a Moving Charge in a Magnetic Field+	f-Block Elements(Lanthanoids and Actinoids)	Digestion of Food
	Cyclotron	Definitions of Some Important Terms Pertaining to Coordination Compounds	Absorption of Digested Products
	Motion of Charged Particle in a Crossed Electric and Magnetic Field	Nomenclature of coordination compounds	Transport of Gases
	Force on a Current Carrying Conductor	Isomerism in co-ordination compounds	Disorders of Digestive System
	Force between Two Current Carrying Conductors	Bonding in co-ordination compounds Part -1	Disorders of Respiratory System
	Current Loop and Dipole Moment	Bonding in co-ordination compounds Part - 2	
	Torque on a Magnetic Dipole	Bonding in Metal Carbonyls	
	Moving Coil Galvanometer	Stability of Coordination Compounds	
	Conversion of Moving Coil Galvanometer to Ammeter and Voltmeter	Importance of coordination compounds	
	Magnetic Effect of Current	Important inorganic structures	
Module 17	Special Cases of Magnetic Field due to Current Carrying Conductors		
	The Bar Magnet	Structural representations of organic compounds	Circulatory Pathways
	Magnetism and Magnetic Intensity	Classication of organic compounds	Double Circulation and Regulation of Cardiac Activity
	Torque and P.E of a Magnet in a Magnetic Field	Nomenclature of organic compounds	Urine Formation
	The Earth's Magnetism	Isomerism in Organic Compounds	Function of the Tubules
	Magnetic Properties of Materials	Methods of Purification of Organic Compounds	Role of Other Organs in Excretion
	Magnetic Field and Dipole Moment Due to Revolving Charge	Qualitative and Quantitative Analysis of Organic Compounds	Mechanism of Concentration of the Filtrate
	Permanent Magnets and Electromagnets	Fundamental Concepts in Organic Reaction Mechanism	Disorders of Circulatory System
Module 18	Magnetism and Gauss's Laws		Disorders of Excretory System
	Magnetic Flux	Alkanes	Muscle
	Faraday's Law of Induction	Alkenes	Neuron as Structural and Functional Unit of Neural System
	Lenz's law and Conservation of Energy	Alkynes	Disorders of Muscular and Skeletal System
	Motional Electromotive Force	Aromatic Hydrocarbons	Sensory Reception and Processing
	Self Induction		Joints
	Mutual Induction		
	Energy Stored in an Inductor		
Module 19	Eddy Currents		
Module 20	Cumulative Test based on Module 17, 18, 19	Cumulative Test based on Module 17, 18, 19	Cumulative Test based on Module 17, 18, 19

	AC Current and AC Voltage, Mean Value, RMS Value	Classification & Nomenclature of Haloalkanes and Haloarenes	Endocrine Glands and Hormones
	AC Voltage Applied to a Resistor	Nature of C-X bond	Male Reproductive System
	AC Voltage Applied to an Inductor	Methods of Preparation of Haloalkanes and Haloarenes	Female Reproductive System
	AC Voltage Applied to a Capacitor	Physical Properties of Haloalkanes and Haloarenes	Gametogenesis
	AC Voltage Applied to a Series LCR Circuit	Chemical Reactions of Haloalkanes and Haloarenes	Fertilization and Implantation
	Resonance in AC Circuits	Poly halogen compounds	Parturition and Lactation
	Power in AC circuit:The Power Factor		
	Transformers		
	AC Generator		
Module 21	LC Oscillations		
	Electromagnetic Waves	Classification & Nomenclature of Alcohols, Phenols and Ethers	Infertility
	Properties of Electromagnetic Waves	Structures of functional groups	Medical Termination of Pregnancy
	Equations for Electric and Magnetic Vectors in an Electromagnetic Wave	Alcohols	Populations
	Displacement Current	Phenols	Population Explosion and Birth Control
	Coherent and Incoherent Addition of Waves	Ethers	Sex Determination
	Interference of Light Waves and Young's Experiment		Genetic Disorders
	Diffraction		
	Polarisation		
	Electromagnetic Spectrum		
Module 22	Huygens' Principle		
	Reflection of Light by Spherical Mirrors	Nomenclature and Structure of Carbonyl Group	Microbes in Household Products
	Refraction	Preparation of Aldehydes and Ketones	Microbes in Industrial Products
	Total Internal Reflection	Physical Properties of Aldehydes and Ketones	Water Pollution and its Control
	Refraction at Spherical Surfaces and Lenses	Chemical Reactions of Aldehydes and Ketones	Solid Wastes
	Refraction Through a Prism	Uses of Aldehydes And Ketones	Sexually Transmitted Diseases
	Dispersion	Nomenclature And Structure of Carboxylic Acids	
	Scattering of Light, Blue Color of Sky and Rainbow	Methods of Preparation of Carboxylic Acids	
	Optical Instruments - Human Eye, Simple Magnifier, Compound Microscope, Telescope	Physical Properties of Carboxylic Acids	
	Power of a Lens	Chemical Reactions of Carboxylic Acids	
Module 23		Uses of Carboxylic Acids	

Module 24	Cumulative Test based on Module 21, 22, 23	Cumulative Test based on Module 21, 22, 23	Cumulative Test based on Module 21, 22, 23
	Particle Nature of Light: The Photon	Classification of Amines	Cell Cycle
	Photoelectric Effect	Nomenclature of Amines	M Phase
	Einstein's Photoelectric Equation	Preparation of Amines	Cancer
	Wave Nature of Matter and de Broglie Wavelength	Physical Properties of Amines	Meiosis
	Alpha-Particle Scattering and Rutherford's Nuclear Model of Atom	Chemical Reactions of Amines	Radioactive Wastes
	Bohr's Model of the Hydrogen Atom	Diazonium Salts	Ozone Depletion in the Stratosphere
	The Line Spectra of the Hydrogen atom	Carbohydrates	
	Atomic Masses and Composition of Nucleus	Proteins	
	Size of the Nucleus	Enzymes	
	Mass - Energy Relation and Nuclear Binding Energy	Vitamins	
	Radioactivity	Nucleic Acids	
	Nuclear Force		
Module 25	Nuclear energy and Nuclear fission and fusion		
	Classification of Metals, Conductors and Semiconductors	Classification of polymers	Sexually Transmitted Diseases
	Intrinsic Semiconductor	Types of polymerization	Blood
	Extrinsic Semiconductor	Bio Degradable Polymers	Lymph
	Application of Junction Diode as a Rectifier	Drugs	Immunity
	Special Purpose p-n Junction Diodes	Chemicals in food	AIDS
	Junction Transistors andTransistor Configuration and Current Amplification Factors	Cleansing agents	Biotechnological Applications in Medicine
	Transistor as an Amplifier and Oscillator	Important organic named reactions	Ethical Issues
	Digital Electronics and Logic Gates	Reaction Mechanisms	Transgenic Animals
	Propagation of Radio Waves	Distinction Tests	
	Modulation and its Necesisity		
	Amplitude Modulation		
	Elements of a Communication System		
	Basic Terminology Used in Electronic Communication Systems		
	Bandwidth of Signals		
Module 26	p-n junction		
Module 27	Cumulative Test based on Module 25, 26	Cumulative Test based on Module 25, 26	Cumulative Test based on Module 25, 26 + below given topics
			Inheritance of One Gene
			Inheritance of Two Genes
			Principles of Biotechnology
			Tools of Recombinant DNA Technology
			Processes of Recombinant DNA Technology
			Plant Breeding

			Biotechnological Applications in Agriculture
			Tissue Culture
			Animal Husbandry
Module 28	Revision Test 1	Revision Test 1	Revision Test 1
Module 29	Revision Test 2	Revision Test 2	Revision Test 2
Module 30	Revision Test 3	Revision Test 3	Revision Test 3
Module 31	Revision Test 4	Revision Test 4	Revision Test 4
Module 32	Revision Test 5	Revision Test 5	Revision Test 5
Module 33	Revision Test 6	Revision Test 6	Revision Test 6
Module 34	Revision Test 7	Revision Test 7	Revision Test 7
Module 35	Revision Test 8	Revision Test 8	Revision Test 8
Module 36	Revision Test 9	Revision Test 9	Revision Test 9
Module 37	Revision Test 10	Revision Test 10	Revision Test 10