

PHYSICS SYLLABUS_ACHIEVER PLUS (session 2025-26)			
Subject	Class	Unit	Chapter's Name
PHYSICS	XI	Vectors	Scalars and Vectors, Vector. Addition and subtraction, scalar and vector products, Unit Vector, Resolution of a Vector
PHYSICS	XI	PHYSICS AND MEASUREMENT	Units of measurements, System of Units, , S I Units, fundamental and derived units, least count, significant figures, Errors in measurements , Dimensions of Physics quantities, dimensional analysis and its applications.
PHYSICS	XI	GRAVITATION	The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Kepler's law of planetary motion. Gravitational potential energy; gravitational potential. Escape velocity, Motion of a satellite, orbital velocity, time period and energy of satellite.
PHYSICS	XI	THERMAL PHYSICS	Heat, temperature, thermal expansion; specific heat capacity, calorimetry; change of state, latent heat. Heat transfer conduction, convection, and radiation. Thermal equilibrium, zeroth law of thermodynamics, the concept of temperature. Heat, work, and internal energy. The first law of thermodynamics, isothermal and adiabatic processes. The second law of thermodynamics: reversible and irreversible processes. Equation of state of a perfect gas, work done on compressing a gas, Kinetic theory of gases - assumptions, the concept of pressure. Kinetic interpretation of temperature: RMS speed of gas molecules: Degrees of freedom. Law of equipartition of energy and applications to specific heat capacities of gases; Mean free path. Avogadro's number.

PHYSICS	XII	ELECTROMAGNETIC WAVES	Displacement current. Electromagnetic waves and their characteristics, Transverse nature of electromagnetic waves, Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet. X-rays. Gamma rays), Applications of e.m. waves.
---------	-----	------------------------------	--

ALLEN

CHEMISTRY SYLLABUS_ACHIEVER PLUS (session 2025-2026)

Subject	Class	Unit	Chapter's Name
CHEMISTRY	XI	SOME BASIC CONCEPTS IN CHEMISTRY	Matter and its nature, Dalton's atomic theory: Concept of atom, molecule, element, and compound:: Laws of chemical combination; Atomic and molecular masses, mole concept, molar mass, percentage composition, empirical and molecular formulae: Chemical equations and stoichiometry.
CHEMISTRY	XI	ATOMIC STRUCTURE	Nature of electromagnetic radiation, photoelectric effect; Spectrum of the hydrogen atom. Bohr model of a hydrogen atom - its postulates, derivation of the relations for the energy of the electron and radii of the different orbits, limitations of Bohr's model; Dual nature of matter, de Broglie's relationship. Heisenberg uncertainty principle. Elementary ideas of quantum mechanics, quantum mechanics, the quantum mechanical model of the atom, its important features. Concept of atomic orbitals as one-electron wave functions: Variation of ψ and ψ^2 with r for 1s and 2s orbitals; various quantum numbers (principal, angular momentum, and magnetic quantum numbers) and their significance; shapes of s, p, and d - orbitals, electron spin and spin quantum number: Rules for filling electrons in orbitals – Aufbau principle. Pauli's exclusion principle and Hund's rule, electronic configuration of elements, extra stability of half-filled and completely filled orbitals.
CHEMISTRY	XI	REDOX REACTIONS	Electronic concepts of oxidation and reduction, redox reactions, oxidation number, rules for assigning oxidation number, balancing of redox reactions.

CHEMISTRY	XI	EQUILIBRIUM	<p>Meaning of equilibrium, the concept of dynamic equilibrium.</p> <p>Equilibria involving physical processes: Solid-liquid, liquid - gas and solid-gas equilibria, Henry's law. General characteristics of equilibrium involving physical processes.</p> <p>Equilibrium involving chemical processes: Law of chemical equilibrium, equilibrium constants (K_p and K_c) and their significance, the significance of ΔG and ΔG° in chemical equilibrium, factors affecting equilibrium concentration, pressure, temperature, the effect of catalyst; Le Chatelier's principle.</p>
CHEMISTRY	XI	CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES	<p>Modern periodic law and present form of the periodic table, s, p, d and f block elements, periodic trends in properties of elements atomic and ionic radii, ionization enthalpy, electron gain enthalpy, valence, oxidation states, and chemical reactivity.</p>
CHEMISTRY	XI	PURIFICATION AND CHARACTERISATION OF ORGANIC COMPOUNDS	<p>Purification - Crystallization, sublimation, distillation, differential extraction, and chromatography - principles and their applications.</p> <p>Qualitative analysis - Detection of nitrogen, sulphur, phosphorus, and halogens.</p> <p>Quantitative analysis (basic principles only) - Estimation of carbon, hydrogen, nitrogen, halogens, sulphur, phosphorus. Calculations of empirical formulae and molecular formulae: Numerical problems in organic quantitative analysis,</p>
CHEMISTRY	XI	SOME BASIC PRINCIPLES OF ORGANIC CHEMISTRY	<p>Tetravalency of carbon: Shapes of simple molecules - hybridization (s and p): Classification of organic compounds based on functional groups: and those containing halogens, oxygen, nitrogen, and sulphur; Homologous series: Isomerism - structural and stereoisomerism.</p> <p>Nomenclature (Trivial and IUPAC) Covalent bond fission - Homolytic and heterolytic: free radicals, carbocations, and carbanions; stability of carbocations and free radicals, electrophiles, and nucleophiles.</p>

CHEMISTRY	XII	BIOMOLECULES	<p>General introduction and importance of biomolecules.</p> <p>CARBOHYDRATES - Classification; aldoses and ketoses: monosaccharides (glucose and fructose) and constituent monosaccharides of oligosaccharides (sucrose, lactose, and maltose).</p> <p>PROTEINS - Elementary Idea of • -amino acids, peptide bond, polypeptides. Proteins: primary, secondary, tertiary, and quaternary structure (qualitative idea only), denaturation of proteins, enzymes.</p> <p>VITAMINS – Classification and functions.</p> <p>NUCLEIC ACIDS – Chemical constitution of DNA and RNA.</p> <p>Biological functions of nucleic acids.</p> <p>Hormones (General introduction)</p>
CHEMISTRY	XII	PRINCIPLES RELATED TO PRACTICAL CHEMISTRY	<p>Detection of extra elements (Nitrogen, Sulphur, halogens) in organic compounds; Detection of the following functional groups; hydroxyl (alcoholic and phenolic), carbonyl (aldehyde and ketones) carboxyl, and amino groups in organic compounds.</p> <ul style="list-style-type: none"> • The chemistry involved in the preparation of the following: Inorganic compounds; Mohr's salt, potash alum. Organic compounds: Acetanilide, p-nitro acetanilide, aniline yellow, iodoform. <p>The chemistry involved in the titrimetric exercises – Acids, bases and the use of indicators, oxalic acid vs KMnO_4, Mohr's salt vs KMnO_4</p> <p>Chemical principles involved in the following experiments:</p> <ol style="list-style-type: none"> 1. Enthalpy of solution of CuSO_4 2. Enthalpy of neutralization of strong acid and strong base. 3. Preparation of lyophilic and lyophobic sols. 4. Kinetic study of the reaction of iodide ions with hydrogen peroxide at room temperature.

BIOLOGY SYLLABUS_ACHIEVER PLUS (Session 2025-26)

Subject	Class	Unit	Chapter's Name
BIOLOGY	XI	UNIT 2: Structural Organisation in Animals and Plants	Animal tissues; Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (Frog). (Brief account only)
BIOLOGY	XI	UNIT 5 : Human Physiology	Breathing and Respiration: Respiratory organs in animals (recall only); Respiratory system in humans; Mechanism of breathing and its regulation in humans-Exchange of gases, transport of gases and regulation of respiration Respiratory volumes; Disorders related to respiration-Asthma, Emphysema, Occupational respiratory disorders.
			Body fluids and circulation: Composition of blood, blood groups, coagulation of blood; Composition of lymph and its function; Human circulatory system-Structure of human heart and blood vessels; Cardiac cycle, cardiac output, ECG, Double circulation; Regulation of cardiac activity; Disorders of circulatory system-Hypertension, Coronary artery disease, Angina pectoris, Heart failure.
			Excretory products and their elimination: Modes of excretion-Ammonotelism, ureotelism, uricotelism; Human excretory system-structure and function; Urine formation, Osmoregulation; Regulation of kidney function-Renin-angiotensin, Atrial Natriuretic Factor, ADH and Diabetes insipidus; Role of other organs in excretion; Disorders; Uraemia, Renal failure, Renal calculi, Nephritis; Dialysis and artificial kidney.
			Locomotion and Movement: Types of movement- ciliary, flagellar, muscular; Skeletal muscle- contractile proteins and muscle contraction; Skeletal system and its functions (To be dealt with the relevant practical of Practical syllabus); Joints; Disorders of muscular and skeletal system-Myasthenia gravis, Tetany, Muscular dystrophy, Arthritis, Osteoporosis, Gout.
			Neural control and coordination: Neuron and nerves; Nervous system in humans central nervous system, peripheral nervous system and visceral nervous system; Generation and conduction of nerve impulse;
			Chemical coordination and regulation: Endocrine glands and hormones; Human endocrine system-Hypothalamus, Pituitary, Pineal, Thyroid, Parathyroid, Adrenal, Pancreas, Gonads; Mechanism of hormone action (Elementary Idea); Role of hormones as messengers and regulators, Hypo- and hyperactivity and related disorders (Common disorders e.g. Dwarfism, Acromegaly, Cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease). (Imp: Diseases and disorders mentioned above to be dealt in brief.).