Topic 11th		Topic Completion Topic Revision	Topic MCQ	Topic 12th	Subtopic 12th	Topic Completior To	pic Revision Top	oic MCQ
TI: Physical World and Measurement	scope and excitement			Electrostatics	Electric charges and their conservation			
i i. riiysidai vvoitu and measurement	nature of physical laws				Coulomb's law-force between two point charges, forces between multiple charges			
	Physics, technology, and society				Superposition principle and continuous charge distribution			
	Units of measurement				Electric field, electric field due to a point charge, electric field lines			
	systems of units				Electric dipole, electric field due to a dipole			
	SI units, fundamental and derived units.				Torque on a dipole in a uniform electric field			
	or drifts, randamental and derived drifts.				Electric flux			
	accuracy and precision of measuring instruments;				Statement of Gauss's theorem and its applications to find field due to			
	errors in measurement				infinitely long straight wire Uniformly charged infinite plane sheet and uniformly charged thin			
	significant figures				spherical shell (field inside and outside) Electric potential			
	Dimensions of physical quantities, dimensional analysis, and its applications				Potential difference			
	applications				Electric potential due to a point charge			
NIT II: Kinematics	A frame of reference, Motion in a straight line				A dipole and system of charges: equipotential surfaces, electrical potential energy of a system of two point charges and of electric diploes in an electrostatic field			
	Position-time graph, speed, and velocity				Conductors and insulators			
	Uniform and non-uniform motion, average speed, and instantaneous velocity				Free charges and bound charges inside a conductor			
	Uniformly accelerated motion, velocity-time, and position-time graphs, for uniformly accelerated motion (graphical treatment)				Dielectrics and electric polarization			
IIT III: Kinematics	Scalar and vector quantities: Position and displacement vectors, general vectors, general vectors and notation, equality of vectors,				Capacitors and capacitance			
	multiplication of vectors by a real number addition and subtraction of vectors				Combination of capacitors in series and in parallel			
					·			
	Relative velocity.				Capacitance of a parallel plate capacitor with and without dielectric medium between the plates			
	Unit vectors.				Energy stored in a capacitor			
	Resolution of a vector in a plane-rectangular component				Van de Graaff generator			
	Scalar and Vector products of Vectors							
	Motion in a plane			Current Electri	c Electric current			
	Cases of uniform velocity and uniform acceleration- projectile motion				The flow of electric charges in a metallic conductor			
					-			
	. Uniform circular motion.				Drift velocity and mobility, and their relation with electric current			
					Ohm's law			
NIT III: Laws of Motion	Intuitive concept of force				Electrical resistance			
	Inertia, Newton's first law of motion; momentum and Newton's second law of motion				V-I characteristics (liner and non-linear)			
	impulse				Electrical energy and power			
	Newton's third law of motion				Electrical resistivity, and conductivity			
	Law of conservation of linear momentum and its applications				Carbon resistors			
	Equilibrium of concurrent forces				Carbon resistors, color code for carbon resistors			
	Static and Kinetic friction, laws of friction, rolling friction, lubrication				Series and parallel combinations of resistors			
	Dynamics of uniform circular motion				Temperature dependence of resistance			
	Centripetal force, examples of circular motion (vehicle on level				Internal resistance of a cell, potential difference and emf of a cell,			
	circular road, vehicle on banked road).				combination of cells in series and in parallel.			
					Kirchhoff's laws and simple applications			
NIT IV: Work, Energy, and Power	Work done by a constant force and variable force				Wheatstone bridge, metre bridge			
	kinetic energy, work-energy theorem, power				Potentiometer-principle and applications to measure potential difference, and for comparing emf of two cells			
	Notion of potential energy, the potential energy of a spring, conservative forces				Measurement of internal resistance of a cell			
	conservation of mechanical energy (kinetic and potential energies)							
	nonconservative forces; motion in a vertical circle, elastic and			Magnetic Effec	ts Concept of magnetic field, Oersted's experiment. Biot-Savart law and its			
	inelastic collisions in one and two dimensions.				application to current carrying circular loop Ampere's law and its applications to infinitely long straight wire, straight			
					and toroidal solenoids. Force on a moving charge in uniform magnetic and electric fields. Cyclotron			
NIT V: Motion of System of Particles and Rigi	d Boc Centre of mass of a two-particle system, momentum conservation,				Force on a current-carrying conductor in a uniform magnetic field			
	and centre of mass motion Centre of mass of a rigid body				Force between two parallel current-carrying conductors-definition of			
					ampere			
	centre of mass of uniform rod				Torque experienced by a current loop in a magnetic field			
	Moment of a force,-torque, angular momentum, conservation of				Moving coil galvanometer-its current sensitivity and conversion to			
	angular momentum with some examples.				ammeter and voltmeter			
	Equilibrium of rigid bodies, rigid body rotation, and equation of				Current loop as a magnetic dipole and its magnetic dipole moment			
	rotational motion, comparison of linear and rotational motions the moment of inertia, the radius of gyration				Magnetic dipole moment of a revolving electron			
	Values of M.I. for simple geometrical objects (no derivation)				Magnetic field intensity due to a magnetic dipole (bar magnet) along its			
					axis and perpendicular to its axis			

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	Statement of parallel and perpendicular axes theorems and their applications.				Torque on a magnetic dipole (bar magnet) in a uniform magnetic field	
					Bar magnet as an equivalent solenoid, magnetic field lines	
NIT VI: Gravitation	Kepler's laws of planetary motion.				Earth's magnetic field and magnetic elements	
	The universal law of gravitation				Para-, dia-and ferro-magnetic substances, with examples	
	Acceleration due to gravity and its variation with altitude and depth				Electromagnetic and factors affecting their strengths. Permanent magnets.	
	Gravitational potential energy					
	gravitational potential. Escape velocity, orbital velocity of a satellite			Electromagneti	Electromagnetic induction	
	Geostationary satellites.				Faraday's law	
					Induced emf and current	
NIT VII: Properties of Bulk Matter	Elastic behavior, Stress-strain relationship				Lenz's Law, Eddy currents. Self and mutual inductance	
WIT VII. Properties of bulk matter	Hooke's law, Young's modulus, bulk modulus, shear, modulus of				Alternating currents, peak and rms value of alternating current/ voltage	
	rigidity, poisson's ratio; elastic energy. Viscosity, Stokes' law, terminal velocity, Reynold's number,				Reactance and impedance	
	streamline and turbulent flow				Treatance and impedance	
	Critical velocity, Bernoulli's theorem and its applications.				LC oscillations (qualitative treatment only), LCR series circuit, resonance	
	Surface energy and surface tension, angle of contact, excess of pressure, application of surface tension ideas to drops, bubbles and				Power in AC circuits, wattles current	
	capillary rise.					
	Heat, temperature, thermal expansion				AC generator and transformer	
	thermal expansion of solids, liquids, and gases. Anomalous expansion					
	Specific heat capacity: Cp, Cv- calorimetry			UNIT V:	Need for displacement current	
	change of state – latent heat			Electromagneti	Electromagnetic waves and their characteristics (qualitative ideas only)	
	Heat transfer- conduction and thermal conductivity, convection and			c Waves	Transverse nature of electromagnetic waves	
	radiation				Flantana and the control of the cont	
ar Ne	Qualitative ideas of Black Body Radiation, Wein's displacement law and Green House effect.				Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, x-rays, gamma rays) including elementary facts about their uses	
	Newton's law of cooling and Stefan's law.				uses	
	Tomos o law or cooming and octorario law.					
NIT VIII: Thermodynamics	Thermal equilibrium and definition of temperature (zeroth law of					
T VIII: Thermodynamics	Thermodynamics)					
	Heat, work and internal energy			Optics F	Reflection of light, spherical mirrors, mirror formula	
	First law of thermodynamics				Refraction of light, total internal reflection and its applications optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lens-maker's formula.	
	Isothermal and adiabatic processes				Magnification, power of a lens, combination of thin lenses in contact combination of a lens and a mirror	
	Second law of the thermodynamics: Reversible and irreversible				Refraction and dispersion of light through a prism	
	processes				Contrains of light blue colour of the clustered and dish accessors of the	
	Heat engines and refrigerators.				Scattering of light- blue colour of the sky and reddish appearance of the sun at sunrise and sunset	
					Optical instruments: Human eye, image formation and accommodation,	
NIT IV. Dahariana of Danfart Cas and Kinstin The	or Equation of state of a perfect gas, work done on compressing a gas				correction of eye defects (myopia and hypermetropia) using lenses Microscopes and astronomical telescopes (reflecting and refracting) and	
NII IX: Benaviour of Perfect Gas and Kinetic The					their magnifying powers	
	Kinetic theory of gases: Assumptions, concept of pressure. Kinetic energy and temperature				Wave optics: Wavefront and Huygens' principle, reflection and refraction of plane wave at a plane surface using wavefronts	1
	degrees of freedom, law of equipartition of energy (statement only) and application to specific heat capacities of gases				Proof of laws of reflection and refraction using Huygens' principle	
	concept of mean free path				Interference, Young's double hole experiment and expression for fringe	
					width, coherent sources and sustained interference of light	
					Diffraction due to a single slit, width of central maximum	
NIT X: Oscillations and Waves	Periodic motion-period, frequency, displacement as a function of time	е			Resolving power of microscopes and astronomical telescopes	
	Periodic functions				Polarisation, plane polarized light; Brewster's law, uses of plane polarized light and Polaroids	
	Simple harmonic motion(SHM) and its equation					
	phase				Photoelectric effect	
	oscillations of a spring-restoring force and force constant			Nature of	Hertz and Lenard's observations	
	energy in SHM -Kinetic and potential energies			Matter and Radiation	Einstein's photoelectric equation- particle nature of light.	
	simple pendulum-derivation of expression for its time period			isaulauon	Matter waves- wave nature of particles, de Broglie relation	
	free, forced and damped oscillations (qualitative ideas only),				Davisson-Germer experiment (experimental details should be omitted;	
	resonance				only conclusion should be explained)	
	Wave motion. Longitudinal and transverse waves, speed of wave					
	motion. Displacement relation for a progressive wave Principle of superposition of waves, reflection of waves, standing			UNIT VIII:	Alpha- particle scattering experiments; Rutherford's model of atom; Boh	
	waves in strings and organ pipes, fundamental mode and harmonics			Atoms and	model, energy levels, hydrogen spectrum	'
	Beats			Nuclei	Composition and size of nucleus, atomic masses, isotopes, isobars;	
	Dopplers effect				isotones Radioactivity- alpha, beta and gamma particles/ rays and their propertie	
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Topic 11th	Subtopic 11th	Topic Completion	Topic Revision	Topic MCQ	Topic 12th	Subtopic 12th	Topic Completior Topic Revision T	lopic MCQ
						Mass-energy relation, mass defect		
						binding energy per nucleon and its variation with mass number, nuclear fission and fusion		
					UNIT IX:	Energy bands in solids (qualitative ideas only), conductors, insulators		
					Electronic	and semiconductors		
					Devices	semiconductor diode- I-V characteristics in forward and reverse bias,		
						diode as a rectifier; I-V characteristics of LED, diode, solar cell, and Zener diode; Zener diode as a voltage regulator		
						unction transistor, transistor action, characteristics of a transistor,		
						transistor as an amplifier (common emitter configuration) and oscillator		
						Logic gates (OR, AND, NOT, NAND and NOR)		
						Transistor as a switch		

Topic 11th	Subtopic 11th	Topic Completion	Topic Revision	Topic MCQ	Topic 12th	Subtopic 12th	Topic Completion	Topic Revision	Topic MCQ
ome Basic Concepts of Chemistry	General Introduction:				UNIT I: Solid State	Classification of solids based on different binding forces; molecular, ionic covalent and metallic solids			
Some Basic Concepts of Chemistry Important Laws Daltor concepts of Chemistry Laws Daltor concepts of Chemistry Laws Daltor concepts of Chemistry Atom Mole Perceptor chemistrichem	Important and scope of chemistry.					amorphous and crystalline solids (elementary idea			
	Laws of chemical combination					unit cell in two dimensional and three dimensional lattices			
	Dalton's atomic theory					calculation of density of unit cell			
	concept of elements					packing in solids			1
	atoms and molecules					packing efficiency			-
	Atomic and molecular masses					voids			
	Mole concept and molar mass					number of atoms per unit cell in a cubic unit			
	Wole concept and molal mass					cell			
	percentage composition and empirical and molecular formula					point defects			
	chemical reactions					electrical and magnetic properties			
	stoichiometry and calculations based on stoichiometry					Band theory of metals			
						conductors			
om	Atomic number, isotopes and isobars					semiconductors and insulators			
	Concept of shells and subshells								
	dual nature of matter and light				UNIT II: Solutions	Types of solutions			
NIT II: Structure of tom Atc Coi due de Hei cor que she rule Par ele sta	de Broglie's relationship					expression of concentration of solutions of solids in liquids			
	Heisenberg uncertainty principle					solubility of gases in liquids			
dua de l Hei: con qua sha rule Pau elec	concept of orbital					solid solutions			
	quantum numbers					colligative properties- relative lowering of vapour pressure			
	shapes of s,p and d orbitals					Raoult's law,			
	rules for filling electrons in orbitals- Aufbau principle					elevation of boiling point			
	Pauli exclusion principles and Hund's rule					depression of freezing point			
	electronic configuration of atoms					osmotic pressure			
	stability of half filled and completely filled orbitals					determination of molecular masses using colligative properties abnormal molecular mass			
						Van Hoff factor			
NIT III: Classification	Modern periodic law and long form of periodic table								
	periodic trends in properties of elementsatomic radii				UNIT III:	Redox reactions			
eriodicity in Properties	ionic radii				Electrochemistry	conductance in electrolytic solutions			_
	ionization enthalpy					specific and molar conductivity variation of conductivity with concentration			
	electron gain enthalpy					kohlrausch's Law			
	electrone gativity					electrolysis and Laws of electrolysis			
	valence					(elementary idea dry cell- electrolytic cells and Galvanic			
						cells; lead accumulator EMF of a cell			
JNIT IV: Chemical Sonding and Molecular Structure Lew pole	Valence electrons, ionic bond, covalent bond					standard electrode potential			
	bond parameters					Relation between Gibbs energy change and EMF of a cell			
	Lewis structure					fuel cells; corrosion			
	polar character of covalent bond								
	valence bond theory				UNIT IV: Chemical Kinetics	Rate of a reaction (average and instantaneous)			
	resonance, geometry of molecules					factors affecting rates of reaction; concentration, temperature			
	VSEPR theory					catalyst; order and molecularity of a reaction; rate law and specific rate constant			

	concept of hybridization involving s, p and d		concept of collision theory (elementary	
	orbitals and shapes of some simple molecules		idea, no mathematical treatment)	
	molecular orbital theory of homonuclear diatomic		Activation energy	
	molecules (qualitative idea only). Hydrogen bond		Arrhenious equation	
UNIT V: States of Matter:	Three states of matter		Affile flous equation	
Gases and Liquids	intermolecular interactions	UNIT V: Surface	Adequation why reignmention and	
t	Intermolecular Interactions	Chemistry	Adsorption-physisorption and chemisorption; factors affecting adsorption of gases on solids	
	types of bonding		catalysis homogeneous and heterogeneous	
	melting and boiling points		activity and selectivity: enzyme catalysis; colloidal state: distinction between true solutions	
	role of gas laws of elucidating the concept of the molecule		colloids and suspensions; lyophillic, lyophobic multimolecular and macromolecular colloids	
	Boyle's law		properties of colloids; Tyndall effect	
	Charle's law		Brownian movement	
	Gay Lussac's law		electrophoresis	
	Avogadro's law		coagulation; emulsions- types of emulsions	
	ideal behaviour of gases			
	empirical derivation of gas equation	UNIT VI: General Principles and	Principles and methods of extraction- concentration	
id K id	Avogadro number	Processes of Isolation	oxidation	
	ideal gas equation	of Elements	reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron	
	Kinetic energy and molecular speeds (elementary idea)		aluminium, copper, zinc and iron	
	deviation from ideal behaviour	UNIT VII: p- Block	Group 15 elements: General introduction	
	liquefaction of gases	Elements	electronic configuration	
	critical temperature.		occurrence	
	Liquid State- Vapour pressure		oxidation states	
	viscosity and surface tension (qualitative idea only, no mathematical derivations)		trends in physical and chemical properties; preparation and properties of ammonia and nitric acid	
			oxides of nitrogen (structure only	
UNIT VI : Thermodynamics	First law of thermodynamics-internal energy and enthalpy		Phosphorous- allotropic forms; compounds of phosphorous: preparation and properties of phosphine	
	heat capacity and specific heat		halides (PCI3, PCI5) and oxoacids (elementary idea only).	
	measurement of U and H		Group 16 elements: General introduction	
	Hess's law of constant heat summation		electronic configuration	
	enthalpy of : bond dissociation		oxidation states	
	combustion		trends in physical and chemical properties; dioxygen: preparation, properties and uses	
	formation		classification of oxides; ozone	
	atomization		Sulphur – allotropic forms; compounds of sulphur: preparation, preparation, properties and uses of sulphur dioxide	
s	sublimation		sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).	
	phase transition		Group 17 elements: General introduction	
	ionization		electronic configuration	
	solution and dilution		oxidation states	
	Introduction of entropy as state function		trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid	

	Coond low of thermodynamics		interhalogen compounds evereids of	
	Second law of thermodynamics		interhalogen compounds oxoacids of halogens (structures only)	
	Gibbs energy change for spontaneous and		Group 18 elements: General introduction	
	non-spontaneous process criteria for equilibrium and spontaneity		electronic configuration	
	Third law of thermodynamics- Brief introduction		oxidation states	
	Third law of thermodynamics- blief introduction		trends in physical and chemical properties	
NIT VII: Equilibrium	Equilibrium in physical and chemical processes		uses	
	dynamic nature of equilibrium			
	law of chemical equilibrium	UNIT VIII: d and f Block	Coneral introduction	
equil facto princ base	equilibrium constant	Elements	electronic configuration	
	·		characteristics of transition metals	
	factors affecting equilibrium- Le Chatelier's principle; ionic equilibrium- ionization of acids and bases			
degre ioniz acid conc Hydr	strong and weak electrolytes		general trends in properties of the first row transition metals- metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy	
	degree of ionization		formation Preparation and properties of K2Cr2O7 and	
	ionization of polybasic acids		KMnO4 Lanthanoids- electronic configuration,	
	acid strength	 	oxidation states	
	concept of pH		chemical reactivity	
	Hydrolysis of salts (elementary idea)		lanthanoid contraction and its	
	Tryardydd di daith (dierneritary fada)		consequences	
Her solt con	buffer solutions		Actinoids: Electronic configuration	
	Henderson equation		, oxidation states and comparison with lanthanoids	
	solubility product			
	common ion effect (with illustrative examples)	UNIT IX: Coordination	Coordination compounds: Introduction,	
		Compounds	ligands	
JNIT VIII: Redox	Concept of oxidation and oxidation and reduction		coordination number	
Reactions	redox reactions oxidation number		colour	
	balancing redox reactions in terms of loss and gain of electron and change in oxidation numbers		magnetic properties and shapes	
			IUPAC nomenclature of mononuclear	
JNIT IX: Hydrogen	Occurrence		coordination compounds isomerism (structural and stereo) bonding	
,	isotopes		Werner's theory VBT	
	preparation		CFT; importance of coordination compounds	
			(in qualitative analysis, biological systems)	
	properties and uses of hydrogen; hydridesionic, covalent and interstitial; physical and chemical properties of water			
	heavy water; hydrogen peroxide-preparation,	UNIT X: Haloalkanes	Haloalkanes: Nomenclature	
propheave react uses UNIT X: s-Block Ground Relating the react th	reactions uses and structure	and Haloarenes	nature of C –X bond	
	uses and structure		physical and chemical properties	
	Group I and group 2 elements : General introduction		mechanism of substitution reactions	
	electronic configuration		Optical rotation	
	occurrence		Haloarenes: Nature of C-X bond	
	anomalous properties of the first element of each		substitution reactions (directive influence of	
	group		halogen for monosubstituted compounds only)	
	diagonal relationship		Uses and environment effects of – dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT	

	trends in the variation of properties (such as			
	ionization enthalpy atomic and ionic radii	UNIT XI: Alcohols,	Alcohols: Nomenclature	
	trends in chemical reactivity with oxygen	Phenois and Ethers	methods of preparation	
	water		physical and chemical properties (of	
	Water		primary alcohols only	
hydro Prep Com	hydrogen and halogens; uses.		identification of primary, secondary and	
			tertiary alcohols	
Comp Sodiul sodiur sodiur biolog Indust	Preparation and Properties of Some important Compounds		mechanism of dehydration	
	Sodium carbonate		uses with special reference to methanol and ethanol	
	sodium chloride		Phenols: Nomenclature	
	sodium hydroxide and sodium hydrogencarbonate		methods of preparation	
	biological importance of sodium and potassium.		physical and chemical properties	
	Industrial use of lime and limestone, biological		acidic nature of phenol	
	importance of Mg and Ca.			
			electrophillic substitution reactions	
UNIT XI: Some p-Block	General Introduction to p-Block Elements.		uses of phenols	
Elements	Group 13 elements: General introduction		Ethers: Nomenclature	
	electronic configuration		methods of preparation	
	occurrence		physical and chemical properties uses	
	variation of properties			
	oxidation states	UNIT XII: Aldehydes,	Aldehydes and Ketones: Nomenclature	
anc Bor aci Alu	trends in chemical reactivity	Ketones and Carboxylic Acids	nature of carbonyl group	
	anomalous properties of first element of the group;	Acius	methods of preparation	
	Boron, some important compounds: borax, boric acids, boron hydrides			
	Aluminium: uses, reactions with acids and alkalies.		physical and chemical properties	
	General 14 elements: General introduction		mechanism of nucleophilic addition	
	electronic configuration		reactivity of alpha hydrogen in aldehydes; uses	
	occurrence		Carboxylic Acids: Nomenclature	
	variation of properties		acidic nature	
	oxidation states		methods of preparation	
	trends in chemical reactivity		physical and chemical properties; uses	
	anomalous behaviour of first element			
	Carbon	UNIT XIII: Organic	Amines: Nomenclature	
	allotropic forms	Compounds Containing	classification	
	physical and chemical properties: uses of some	Nitrogen	structure	
	important compounds: oxides			
	Important compounds of silicon and a few uses: silicon tetrachloride		methods of preparation	
	silicones		physical and chemical properties	
	silicates and zeolites, their uses.		uses	
			identification of primary secondary and	
UNIT XII: Organic	General introduction		tertiary amines	
Chemistry- Some Basic	General introduction		Cyanides and Isocyanides- will be mentioned at relevant places	
Principles and	methods of purification qualitative and quantitative		Diazonium salts: Preparation, chemical	
Techniques	analysis		reactions and importance in synthetic organic chemistry.	
	classification and IUPAC nomenclature of organic compounds.			
	Electronic displacements in a covalent bond:	UNIT XIV: Biomolecules	Carbohydrates- Classification (aldoses and	
	inductive effect		ketoses)	
	electromeric effect		monosaccharide (glucose and fructose)	
	resonance and hyper conjugation		D.L. configuration	

	Homolytic and heterolytic fission of a covalent bond: free radials			oligosaccharides (sucrose, lactose, maltose)		
	carbocations			polysaccharides (starch, cellulose, glycogen): importance		
	carbanions; electrophiles and nucleophiles, types of			Proteins- Elementary idea of – amino acids		
	organic reactions.			peptide bond		
UNIT XIII: Hydrocarbons	Alkanes- Nomenclature			polypeptides		
	isomerism			proteins, primary structure, secondary structure, tertiary structure and quaternary structure (qualitative idea only)		
	conformations (ethane only)			denaturation of proteins; enzymes		
	physical properties			Hormones- Elementary idea (excluding structure)		
	chemical reactions including free radical mechanism of halogenation			Vitamins- Classification and function		
	combustion and pyrolysis.			Nucleic Acids: DNA and RNA		
	Alkanes-Nomenclature					
	structure of double bond (ethene)		UNIT XV: Polymers	Classification- Natural and synthetic		
	geometrical isomerism			methods of polymerization (addition and condensation)		
	physical properties			copolymerization		
	methods of preparation: chemical reactions: addition of hydrogen			Some important polymers: natural and synthetic like polyesters		
	halogen			bakelite		
	water			rubber		
	hydrogen halides (Markovnikov's addition and peroxide effect)			Biodegradable and non-biodegradable polymers		
	ozonolysis			polymore		
	oxidation		Everyday Life	tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines		
	mechanism of electrophilic addition			Chemicals in food- preservatives, artificial sweetening agents, elementary idea of antioxidants		
	Alkynes-Nomenclature			Cleansing agents- soaps and detergents, cleansing action		
	structure of triple bond (ethyne)			3		
	physical properties					
	methods of preparation					
	chemical reactions: acidic character of alkynes					
	addition reaction of- hydrogen, halogens, hydrogen halides and water.					
	Aromatic hydrocarbons- Introduction					
	IUPAC nomenclature; Benzene; resonance					
	aromaticity; chemical properties: mechanism of electrophilic substitution-Nitration sulphonation					
	halogenation					
	Friedel Craft's alkylation and acylation; directive influence of functional group in mono-substituted benzene; carcinogenicity and toxicity.					
UNIT XIV:	Environmental pollution: Air, water and soil pollution					
Environmental	chemical reactions in atmosphere					
Chemistry	smogs					
	major atmospheric pollutants; acid rain ozone and					
	its reactions effects of depletion of ozone layer					
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greenhouse effect and global warming-pollution due					
to industrial wastes					
green chemistry as an alternative tool for reducing					
pollution					
strategy for control of environmental pollution.					

Горіс 11th	Subtopic 11th	Topic Completion	Topic Revision	Topic MCQ	Topic 12th	Subtopic 12th	Topic Completic	Topic Revision	Topic MCC
iversity in Living World	What is living?				Reproduction	Reproduction in organisms: Reproduction, a characteristic feature of a organisms for continuation of species	I		
	Biodiversity					Modes of reproduction – Asexual and sexual			
	Need for classification					Asexual reproduction			
iversity in Living World Biodiversity in Living World Biodiversity in Living World Biodiversity in Living World Biodiversity in Living World Taxono Conce Binomi Tools of Zoos Herbar Botani Five ki salient Protist Lichen Viruset Salient Bryopi Pteridd Gymn Angios charac Salient level a Salient Irructural Organisation in Morphe Anator respira accour Anator stem, Animal Morphe Anator stem, Animal Morphe Cell to Struct Cell er Cell on Endor lysoso Mitoch Cytosk	Three domains of life					Modes-Binary fission, sporulation, budding, gemmule, fragmentation; vegetative propagation in plants			
	Taxonomy & Systematics					Sexual reproduction in flowering plants: Flower structure			
	Concept of species and taxonomical hierarchy					Development of male and female gametophytes			
	Binomial nomenclature					Pollination-types, agencies and examples			
	Tools for study of Taxonomy – Museums					Outbreeding devices			
	Zoos					Pollen-Pistil interaction			
						Double fertilization			
Botan Five I salier Protis Licher Viruse Salier Bryop Pterid	Botanical gardens					Post fertilization events- Development of endosperm and embryo			
	-					Development of seed and formation of fruit			
	Five kingdom classification					· ·			
	salient features and classification of Monera					Special modes-apomixis, parthenocarpy, polyembryony			
	Protista and Fungi into major groups					Significance of seed and fruit formation			
	Lichens					Human Reproduction: Male and female reproductive systems			
	Viruses and Viroids					Microscopic anatomy of testis and ovary			
	Salient features and classification of plants into major groups-Algae					Gametogenesis-spermatogenesis & oogenesis			
	Bryophytes					Menstrual cycle			
Pt Gy Ar ch Sa lev	Pteridophytes					Fertilisation, embryo development upto blastocyst formation, implantation			
	Gymnosperms and Angiosperms					Pregnancy and placenta formation (Elementary idea)			
	Angiosperms classification up to class					Parturition (Elementary idea)			
	characteristic features and examples					Lactation (Elementary idea)			
	Salient features and classification of animals-nonchordate up to phyla					Reproductive health: Need for reproductive health and prevention of			
	level and chordate up to classes level					sexually transmitted diseases (STD) Birth control-Need and Methods, Contraception and Medical Termination of Pregnancy (MTP)			
	Morphology and modifications					Amniocentesis			
	Tissues					Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness)			
	Anatomy and functions of different parts of flowering plants: Root,					(Elementary ruea for general awareness)			
	stem, leaf, inflorescence- cymose and recemose, flower, fruit and seed Animal tissues				Ganatics and	EvHeredity and variation: Mendelian Inheritance			
					Genetics and	Deviations from Mendelism- Incomplete dominance, Co-dominance,			
						Multiple alleles and Inheritance of blood groups, Pleiotropy			
	Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach). (Brief account only)					Elementary idea of polygenic inheritance			
						Chromosome theory of inheritance			
I Structure and Function	Cell theory and cell as the basic unit of life					Chromosomes and genes			
	Structure of prokaryotic and eukaryotic cell					Sex determination-In humans, birds, honey bee			
	Plant cell and animal cell					Linkage and crossing over			
	Cell envelope, cell membrane, cell wall					Sex linked inheritance- Haemophilia, Colour blindness			
	Cell organelles-structure and function					Mendelian disorders in humans-Thalassemia			
	9								
	Endomembrane system-endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles					Chromosomal disorders in humans			
	Mitochondria, ribosomes, plastids, micro bodies					Down's syndrome, Turner's and Klinefelter's syndromes			
	Cytoskeleton, cilia, flagella, centrioles (ultra structure and function)					Molecular basis of Inheritance: Search for genetic material and DNA a genetic material	3		
	Nucleus-nuclear membrane, chromatin, nucleolus					Structure of DNA and RNA			
Ch	Chemical constituents of living cells: Biomolecules-structure and function of proteins, carbodydrates, lipids, nucleic acids					DNA packaging			
	Enzymes-types, properties, enzyme action					DNA replication			
	B Cell division: Cell cycle, mitosis, meiosis and their significance					Central dogma			
						Transcription, genetic code, translation			
ant Physiology	Transport in plants: Movement of water, gases and nutrients					Gene expression and regulation- Lac Operon			
, 0,	Cell to cell transport-Diffusion, facilitated diffusion, active transport					Genome and human genome project			
Plant	Plant – water relations – Imbibition, water potential, osmosis, plasmolysis					DNA finger printing			
	Long distance transport of water – Absorption, apoplast, symplast,					Evolution: Origin of life			

Topic 11th	Subtopic 11th	Topic Completion	Topic Revision Topic MCQ	Topic 12th	Subtopic 12th	Topic Completic Topic Revision	Topic MCQ
	Transpiration-Opening and closing of stomata				Biological evolution and evidences for biological evolution from		
					Paleontology, comparative anatomy, embryology and molecular		
	Uptake and translocation of mineral nutrients-Transport of food, phloem	1			evidence) Darwin's contribution		
	transport, Mass flow hypothesis						
	Diffusion of gases (brief mention)				Modern Synthetic theory of Evolution		
	Mineral nutrition: Essential minerals, macro and micronutrients and				Mechanism of evolution-Variation (Mutation and Recombination) and		
	their role Deficiency symptoms				Natural Selection with examples, types of natural selection Gene flow and genetic drift		
	Mineral toxicity				Hardy-Weinberg's principle		
	Elementary idea of Hydroponics as a method to study mineral nutrition				Adaptive Radiation		
	Nitrogen metabolism-Nitrogen cycle, biological nitrogen fixation				Human evolution		
	Photosynthesis: Photosynthesis as a means of Autotrophic nutrition				riuman evolution		
	Site of photosynthesis take place			Piology and U	Health and Disease		
				ыоюду ани по			
	pigments involved in Photosynthesis (Elementary idea)				Pathogens (Malada Filada Association		
	Photochemical and biosynthetic phases of photosynthesis				parasites causing human diseases (Malaria, Filariasis, Ascariasis. Typhoid, Pneumonia, common cold, amoebiasis, ring worm)		
	Cyclic and non cyclic and photophosphorylation				Basic concepts of immunology-vaccines		
	Chemiosmotic hypothesis				Cancer, HIV and AIDS		
	Photorespiration C3 and C4 pathways				Adolescence, drug and alcohol abuse		
	Factors affecting photosynthesis				Improvement in food production		
	Respiration: Exchange gases				Plant breeding, tissue culture, single cell protein, Biofortification; Apiculture and Animal husbandry		
	Cellular respiration-glycolysis, fermentation (anaerobic), TCA cycle and	ı			Microbes in human welfare: In household food processing, industrial		
	electron transport system (aerobic)				production, sewage treatment, energy generation and as biocontrol agents and biofertilizers		
	Energy relations- Number of ATP molecules generated						
	Amphibolic pathways			Biotechnology	Principles and process of Biotechnology: Genetic engineering (Recombinant DNA technology)		
	Respiratory quotient				Application of Biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy		
	Plant growth and development: Seed germination				Genetically modified organisms-Bt crops		
	Phases of Plant growth and plant growth rate				Transgenic Animals		
	Conditions of growth				Biosafety issues-Biopiracy and patents		
	Differentiation, dedifferentiation and redifferentiation						
	Sequence of developmental process in a plant cell			Ecology and er	Organisms and environment: Habitat and niche		
	Growth regulators-auxin, gibberellin, cytokinin, ethylene, ABA				Population and ecological adaptations		
	Seed dormancy				Population interactions-mutualism, competition, predation, parasitism		
	Vernalisation				Population attributes-growth, birth rate and death rate, age distribution		
	Photoperiodism				Ecosystem: Patterns, components		+
	•				Productivity and decomposition		
man Physiology	Digestion and absorption				Energy flow		
, , , , , ,	Alimentary canal and digestive glands				Pyramids of number, biomass, energy		
	Role of digestive enzymes and gastrointestinal hormones				Nutrient cycling (carbon and phosphorous)		
	Peristalsis				Ecological succession		_
	digestion				Ecological Services- Carbon fixation, pollination, oxygen release		_
	absorption and assimilation of proteins				Biodiversity and its conservation: Concept of Biodiversity		_
	carbohydrates and fats				Patterns of Biodiversity		
	Caloric value of proteins				Importance of Biodiversity		_
	carbohydrates and fats				Loss of Biodiversity		_
	Egestion				Biodiversity conservation		
	Nutritional and digestive disorders – PEM, indigestion, constipation, vomiting, jaundice, diarrhea Breathing and Respiration: Respiratory organs in animals (recall only)				Hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, National parks and sanctuaries Environmental issues: Air pollution and its control		
	Respiratory system in humans Mechanism of breathing and its regulation in humans-Exchange of				Water pollution and its control Agrochemicals and their effects		
	gases				Callid was to as a second		
	transport of gases and regulation of respiration Respiratory volumes				Solid waste management		
	Disorders related to respiration-Asthma				Radioactive waste management		
	Emphysema				Greenhouse effect and global warning		
	Occupational respiratory disorders				Ozone depletion		

Topic 11th	Subtopic 11th	Topic Completion	Topic Revision	Topic MCQ	Topic 12th	Subtopic 12th	Topic Completic Topic Revision Topic	c MCQ
	Body fluids and circulation: Composition of blood, blood groups, coagulation of blood					Deforestation		
	Composition of lymph and its function					Any three case studies as success stories addressing environmental issues		
	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, uncotelism							
	Human excretory system-structure and fuction							
	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, fiagellar, muscular							
	keletal 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 humanscentral nervous system, peripheral nervous system and visceral nervous system							
	Generation and conduction of nerve impulse							
	Reflex action							
	Sense organs							
	Elementary structure and function of eye and ear							
	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, Acromegally, Cretinism, golter, exopthalmic golter, diabetes, Addison's disease)							
	(Imp: Diseases and disorders mentioned above to be dealt in brief.)							