

TERMWISE SYLLABUS
SESSION-2018-19
CLASS-XII
SUBJECT-CHEMISTRY
TERM-I

MONTH	CONTENT
April 2018 To September 2018	<p>Unit I: Solid State Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n and p type semiconductors. NCERT Questions</p> <p>Unit II: Solutions Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor. NCERT Questions Practical 1.Content Based Experiment(One) 2. Content Based Experiment(One)</p>
	<p>Unit III: Electrochemistry Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell- electrolytic cells and Galvanic cells, lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, fuel cells, corrosion. Yuva Session No. 12.4 To will work for a clean and safe environment. NCERT Questions Practicals: 3.Content Based Experiment(One) 4. (Volumetric Analysis) Determination of concentration /molarity of KMnO_4 solution by titrating it against a standard solution of Ferrous Ammonium Sulphate</p>
SUMMER VACATIONS	

	<p>Unit-4 Chemical Kinetics Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenius equation. NCERT Questions</p> <p>Unit V: Surface Chemistry Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multi-molecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions. NCERT Questions</p> <p>Unit VI: General Principles and Processes of Isolation of Elements Principles and methods of extraction - concentration, oxidation, reduction - electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron NCERT Questions Practicals: 5. Analyse inorganic Salt for one cation and one anion 6. Analyse inorganic Salt for one cation and one anion 7. Analyse inorganic Salt for one cation and one anion 8. Content Based Experiment(One) 9. Content Based Experiment(One) 10. Content Based Experiment(One)</p>
	<p>Unit VII: Some p -Block Elements Group -15 Elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; Nitrogen preparation properties and uses; compounds of Nitrogen, preparation and properties of Ammonia and Nitric Acid, Oxides of Nitrogen(Structure only) ; Phosphorus - allotropic forms, compounds of Phosphorus: Preparation and Properties of Phosphine, Halides and Oxoacids (elementary idea only). Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: Preparation, Properties and uses, classification of Oxides, Ozone, Sulphur -allotropic forms; compounds of Sulphur: Preparation Properties and uses of Sulphur-dioxide, Sulphuric Acid: industrial process of manufacture, properties and uses; Oxoacids of Sulphur (Structures only). Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties;</p>

	<p>compounds of halogens, Preparation, properties and uses of Chlorine and Hydrochloric acid, interhalogen compounds, Oxoacids of halogens (structures only).</p> <p>Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses. NCERT Questions</p> <p>Unit VIII: "d" and "f" Block Elements General introduction, electronic configuration, occurrence and characteristics of transition metals, 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 formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.</p> <p>Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids. NCERT Questions Practical: 11. Analyse inorganic Salt for one cation and one anion 12. Analyse inorganic Salt for one cation and one anion 13. (Volumetric Analysis) Determination of concentration /molarity of $KMnO_4$ solution by titrating it against a standard solution of Oxalic Acid.</p> <p>Unit IX: Coordination Compounds Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system). NCERT Questions</p>
	<p>Unit X: Haloalkanes and Haloarenes Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation. Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT. NCERT Questions 13. Contd..... 14. Analyse inorganic Salt for one cation and one anion</p> <p>REVISION OF UNIT 1-10 FROM SUPPORT MATERIAL</p>
<p>MID TERM EXAMINATION-2018-19</p>	

**OCTOBER
2018-To
FEBURARY
2019**

IIND TERM

Unit XI: Alcohols, Phenols and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

NCERT Questions

Unit XII: Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

NCERT Questions

Practical:

15. Analyse inorganic Salt for one cation and one anion

Uses and environmental effects of –

Dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons and DDT.

16,17 Content Based Experiments(Two)

18,19,20 Content Based Experiments(Three)

Unit XIII: Organic compounds containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides - will be mentioned at relevant places in text.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

NCERT Questions

YUVA Session No. I CAN IMPROVE MY PERFORMANCE IN THE COMING BOARD EXAM.

Unit XIV: Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.

Vitamins - Classification and functions.

	<p>Nucleic Acids: DNA and RNA. NCERT Questions</p> <p>Unit XV: Polymers Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers. NCERT Questions</p> <p>Unit XVI: Chemistry in Everyday life Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines. Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants. Cleansing agents- soaps and detergents, cleansing action. NCERT Questions Practicals: 21. Content Based Experiments(One) 22. Content Based Experiments(One) 23. Content Based Experiments(One) 24. Analyse inorganic Salt for one cation and one anion.</p>
December 2018	<p>COMPLETION OF SYLLABUS BY NOVEMBER 30 ,2018 PROJECT : SUBMISSION OF PROJECT RECORD REVISION OF UNIT 1-XVI MOCK TEST</p>
January 2019	COMMON PRE-BOARD SCHOOL EXAMINATION
February 2019	REVISION AND BOARD PRACTICAL EXAMINATION
March 2019	BOARD EXAMINATION(2018-19)