SYLLABUS 2021–2022

STANDARD: 12 **SUBJECT: CHEMISTRY**

MONTH	NUMBER OF UNITS	UNIT	TOPICS
January	3	3. P-block elements -II	Introduction 3.1 Group 15 (Nitrogen group) elements 3.1.1 Occurrence 3.1.2 Physical properties 3.1.3 Nitrogen Preparation Properties of Nitrogen Uses of nitrogen 3.1.4 Ammonia (NH_3) Preparation Properties of Ammonia Chemical Properties Structure of ammonia 3.1.7 Allotropic forms of phosphorus 3.1.8 Properties of phosphorus Uses of phosphorus Oxoacids of Phosphorus-Structure Group 16 (Oxygen group) elements Occurrence Physical properties 3.2 Oxygen Preparation: Properties Chemical properties Uses of Oxygen 3.2.1 Allotropic forms of sulphur 3.2.2 Sulphur dioxide Preparation Properties Chemical properites Uses of sulphur dioxide Structure of sulphur dioxide Structure of oxoacids of sulphur 3.3 Group 17 (Halogen group) elements: 3.3.1 Chlorine Occurrence: Physical properties of Chlorine 3.3.1 Manufacture of chlorine Physical properties Chemical properties Uses of chlorine

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January	3	3. P-block elements -II	3.3.4 Inter halogen compounds: Properties of inter halogen compounds Structure of inter halogen compounds 3.4 Group 18 (Inert gases) elements: 3.4.1 Occurrence: Physical properties Physical properties-Inert Gases Properties of inert gases Chemical Properties Structures of compounds of Xenon Uses of noble gases
		8.Ionic Equillibrium	Introduction 8.1. Acids and bases 8.1.1 Arrhenius concept 8.1.2 Lowry - Bronsted Theory 8.1.3 Lewis Concept 8.2 Strength Of Acids and Bases 8.3 Ionisation of water 8.4 The pH Scale 8.4.1 Relation between pH and pOH 8.5 Ionistion of Weak Acids 8.5.1 Ostwalds Dilution Law 8.6. Common ion effect 8.7 Buffer Solution 8.7.1 Buffer Action 8.7.3 Henderson Hasselbalch Equation 8.9 Solubility Product 8.9.1 Determination of solubility Product from Molar Solubility
		12. Carbonyl compounds and carboxylic acids	Introduction 12.1 Nomenclature of Aldehyde and Ketones 12.2 Structure of carbonyl group 12.3 General methods of preparation of Aldehydes and Ketones 12.4 Physical properties of Aldehydes and Ketones 12.5 Chemical properties of Aldehydes and Ketones (Mechanism only for aldol and cannizaro reaction)

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January	3		12.6 Test for Aldehydes (First two test only) CARBOXYLIC ACIDS 12.8 Nomenclature of carboxylic acids 12.9 structure of carboxyl group 12.10 Methods of preparation of carboxylic acids except Sno 5 12.11 Physical properties of carboxylic acids 12.12 chemical properties of carboxylic acids (expect mechanism of esterification) Test for carboxylic acid 12.13 Acidity of carboxylic acids
		Practical - Volumetric analysis	3. Estimation of Oxalic acid (Acid Base Titration)
February	2	4. Transition and inner transition elements	Introduction 4.1 Position of d- block elements in the periodic table 4.2 Electronic configuration 4.3 General trend in properties 4.3.1 Metallic behavior 4.3.2 Variation of atomic and ionic size 4.3.3 Ionization enthalpy 4.3.4 Oxidation state 4.3.5 Standard electrode potentials of transition metals 4.3.6 Magnetic properties 4.3.7 Catalytic properties 4.3.8 Alloy formation 4.3.9 Formation of interstitial compounds 4.3.10 Formation of complexes 4.4 Important compound of Transition elements f-block elements – Inner transition elements The position of Lanthanoids in the periodic table Electronic configuration of Lanthanoids Oxidation state of lanthanoids Atomic and ionic radii Causes of lanthanoid contraction Consequences of lanthanoid contraction Actinoids Electronic configuration of actinoids Oxidation state of actinoids Differences between lanthanoids and actinoids

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February	2	9. Electro chemistry	Introduction 9.1 Conductivity of electrolytic solution 9.1.1 Molar conductivity 9.1.2 Equivalent conductance 9.1.3 Factors affecting Electrolytic conductance 9.1.4 Measurement of conductivity of ionic solutions 9.2 Variation of molar conductivity with concentration 9.2.2 Kohlrausch's law and Applications 9.3.2 Galvanic cell notation 9.3.4 Measurement of electrode potential 9.4 Thermodynamics of cell reactions 9.4.1 Nernst equation Electrolytic cell and Electrolysis Faraday's law of electrolysis First law, Second law Electrochemical series
		Practical - Organic compounds	3. Urea 4. Glucose