Pimpri Chinchwad Education Trust's

S. B. Patil College of Science and Commerce

ACA/DI/37	**Teaching Plan (Academic year 24-25)**
Date : 18/09/ 2024	**Subject : Chemistry**
	XI- Science

Month	Lesson No	Lesson's Name	Date	Day	Topic no.	Topic/ Content
Aug-24	1	Some basic concepts of Chemistry	14-Aug-24	Wed	1	Introduction, Nature of Chemistry
			16-Aug-24	Fri	2	Properties of matter and their measurement
			20-Aug-24	Tue	3	Laws Of Chemical Combination,Law of conversation of mass,Law of Definite Proportations,Law of Multiple proportion,Gay Lussac law,Avagadro's law.
			21-Aug-24	Wed	4	Dalton Atomic Theory, Atomic & Molecular masses,Formula mass
			22-Aug-24	Thur	5	Mole Concept,Molar Masses
			23-Aug-24	Fri	6	Moles and Gases
			24-Aug-24	Sat	7	Numericals
	2	Introduction to Analytical Chemistry	26-Aug-24	Mon	1	Introduction,Analysis,Chemical methods of Qualitative and quantitative analysis
			27-Aug-24	Tue	2	Mathematical operation and error analysis ,Scientific notation,Numericals
			28-Aug-24	Wed	3	Precision & accuracy of Measurment,
			29-Aug-24	Thur	4	Significant figures, Rules for deciding Significant figures,Calculations with Significant figures
			30-Aug-24	Fri	5	Determination of molecular formula,Percentage composition & empirical formula
			31-Aug-24	Sat	6	Chemical reactions and stoichiometric calculations ,Problems
			2-Sep-24	Mon	7	Limiting reagents,Concentration of solution : Mass percent(w/w%)
			3-Sep-24	Tue	8	Mole fraction(x),Molarity(M),Molality (m)
			4-Sep-24	Wed	9	Use of graph in analysis
			5-Sep-24	Thur	1	Subatomic particles: Discovery of Proton,electron and Neutron
			6-Sep-24	Fri	2	Atomic number and atomic mass number

Sep-24	**4**	**Structure of atom**	9-Sep-24	Mon	3	Isotopes, Isobars & Isotones
			10-Sep-24	Tue	4	Drawbacks of Rutherford atomic model, Wave particle duality, Characteristic of electromagnetic wave
			11-Sep-24	Wed	5	Developments leading to the Bohr' atomic model: , Line emission spectrum of hydrogen
			12-Sep-24	Thur	6	Bohr's model of Hydrogen atom: Postulates of Bohr atomic theory, Results of Bohr's theory,
			13-Sep-24	Fri	7	Explanation of the line spectrum of hydrogen using Bohr theory, Limitations of Bohr model, Reasons for failure of the Bohr model
			23-Sep-24	Mon	8	Quantum mechanical model of atom: Schrodinger equation
			24-Sep-24	Tue	9	Atomic orbitals and quantum numbers,
			25-Sep-24	Wed	10	Shapes of atomic orbitals
			26-Sep-24	Thur	11	Energies of orbitals, Aufbau principle
			27-Sep-24	Fri	12	Electronic configuration of atoms and its representation
			28-Sep-24	Sat	13	Condensed orbital notation of electronic configuration, Isoelectronic species
Oct-24	**7**	**Modern Periodic table**	30-Sep-24	Mon	1	Introduction, Development of periodic table, Structure of modern periodic table
			1-Oct-24	Tue	2	Electronic configuration in periods and groups
			3-Oct-24	Thur	3	Blockwise characteristics of elements
			4-Oct-24	Fri	4	Periodic trends in elemental properties :Effective nuclear charge & screening effect
			7-Oct-24	Mon	5	Periodic trends in physical properties : Atomic radius, Ionic radius, Ionization enthalpy, Electron gain enthalpy, Electronegativity.
			8-Oct-24	Tue	6	Periodic trends in chemical properties : Valency, Metallic-nonmetallic character, chemical reactivity
	16	**Chemistry in Everyday Life**	9-Oct-24	Wed	1	Basics of food chemistry
			10-Oct-24	Thur	2	Compounds with medicinal properties : Analgesics, Antipyretics, Antimicrobials
			11-Oct-24	Fri	3	Cleansing agents
Oct-24	**11**	**Adsorption and colloids**	14-Oct-24	Thur	1	Introduction, Adsorption , Desorption, sorption, Physisorption, Chemisorption
			14-Oct-24	Mon	2	Factors affecting adsorption of gases on solids
			15-Oct-24	Tue	3	Applications of adsorption, Catalysis
			15-Oct-24	Tue	4	Colloids- introduction, colloidal state, classification of colloids, Preparation & Purification of colloids
			16-Oct-24	Wed	5	Propertiesof colloidal dispersion

			16-Oct-24	Wed	6	Emulsions , Types & properties of emulsions, Applications of colloids
			17-Oct-24	Thur		Revision
			18-Oct-24	Fri	7	Revision
Nov-24	**5**	**Chemical Bonding**	11-Nov-24	Mon	1	Introduction, octet rule, Ionic bond
			12-Nov-24	Tue	2	Ionic solids and lattice enthalpy, Covalent bond, , Resonance
			13-Nov-24	Wed	3	Lewis structure, Formal charge, Limitations of octet rule
			14-Nov-24	Thur	4	VSEPR Theory
			18-Nov-24	Mon	5	VBT Theory : Postulates, Interacting forces during covalent bond formation, Overlap of atomic orbitals
			19-Nov-24	Tue	6	Hybridisation, Types of hybridisation and geometry of molecules,
			20-Nov-24	Wed	7	Importance of V.B.T., limitations of V.B.T.
			21-Nov-24	Thur	8	Molecular orbital theory, Hydrogen bonding
			22-Nov-24	Fri	9	Polar character of covalent bond, Covalent character of ionic bond, Valence bond Theory,
			23-Nov-24	Sat	10	Formal charge,Limitations of octet rule, Valence bond theory: Postulates of valence bond theory,
			25-Nov-24	Mon	11	Interacting forces during covalent bond formation, Overlap of atomic orbitals,
			26-Nov-24	Tue	12	Valence shell electron pair repulsion theory, Hybridisation, Geometry of molecules
			27-Nov-24	Wed	13	Valence shell electron pair repulsion theory
			28-Nov-24	Thur	14	parameters of covalent bond, Polarity of a covalent bond
			29-Nov-24	Fri	15	Dipole moment, Covalent character of ionic bond, Resonance
	13	**Nuclear Chemistry and Radioactivity**	30-Nov-24	Sat	1	Introduction to nuclear chemistry, Classification of nuclides
			2-Dec-24	Mon	2	Nuclear binding energy and mass defect
			3-Dec-24	Tue	3	Radioactivity, Radioactive decay, Rate of decay, Rate law, Expression for decay constant
			3-Dec-24	Tue	4	Half life of radioactive element, Graphical representation, Numericals
			4-Dec-24	Wed	5	Units of radioactivity, Modes of decay , Nuclear reactions,Artificial radioactivity
			4-Dec-24	Wed	6	Nuclear fission, Nuclear fusion, Applications of Radio isotopes
			5-Dec-24	Thur	7	Electrical energy from Nuclear fission, Applications in medicine, Other applications of radioisotopes
	3	**Some Analytical**	6-Dec-24	Fri	1	Introduction
			6-Dec-24	Fri	2	Purification of solids: Crystallization, Fractional Crystallization
			9-Dec-24	Mon	3	Simple Distillation,Fractional distillation, Distillation under reduced pressure

	3	**Techniques**	9-Dec-24	Mon	4	Solvent extraction, Chromatography Techniques:Adsorption Chromatography
			10-Dec-24	Tue	5	Column chromatography,
			10-Dec-24	Tue	6	Thin layer chromatography, Retention factor
Dec-24	**14**	**Basic principles of organic chemistry**	11-Dec-24	Wed	1	Introduction, Structural representation of organic compounds, Condensed formula, Bond line formula or zig-zag formula
			12-Dec-24	Thur	2	Drawing the molecules in the three dimensions, Wedge formula, Fischer projection formula, Newman projection formula, Sawhorse or andiron or perpective formula
			16-Dec-24	Mon	3	Classification of organic compounds, classification based on carbon skeleton, classification based on functional group
			17-Dec-24	Tue	4	Homologous series, Nomenclature of organic compounds, common /trival names, IUPAC nomenclature, IUPAC names of straight chain alkanes, IUPAC names of branched saturated hydrocarbons
			18-Dec-24	Wed	5	Rules for IUPAC nomenclature of branched saturated hydrocarbons, IUPAC nomenclature of unsaturated hydrocarbons, IUPAC names of simple monocyclic hydrocarbons,
			19-Dec-24	Thur	6	Naming monofunctional compounds
			20-Dec-24	Fri	7	IUPAC nomenclature ofcompounds containing one or more functional group,
			23-Dec-24	Thur	8	IUPAC nomenclature of substituted benzene
			30-Dec-24	Mon	9	Isomerism, structural isomerism
			31-Dec-24	Tue	10	Theoretical basis of organic reactions, Types of cleavage of covalent bond,
			1-Jan-25	Wed	11	Types of reagent, Electronic effects in organic reaction , inductive effect
			1-Jan-25	Wed	12	Resonanace, Resonance structures, Resonanace effect, Hyperconjugation
	9	**Elements of Group 13,14 and 15**	10-Jan-25	Fri	1	Introduction, Electronic configuration of elements of groups 13,14 & 15
			11-Jan-25	Sat	2	Trends in atomic & physical propertiesof elements of group 13,14 & 15
			13-Jan-25	Mon	3	Chemical propertiesof elements of group 13,14 & 15 : Reaction towards air, water and halogens
			15-Jan-25	Wed	4	Catenation, Allotropy, Allotropes of carbon
			16-Jan-25	Thur	5	Allotropes of phosphorus
			17-Jan-25	Fri	6	Molecular structures of some important compounds of the group 13,14 and 15 elements
			17-Jan-25	Fri	7	Chemistry of notable compounds of elements of group 13,14 and 15 : Borax, silicones
			20-Jan-25	Mon	8	Ammonia : Preparation and chemical properties

Jan-25	**8**	**Elements of Group 1 and 2**	21-Jan-24	Tue	1	Introduction, position of hydrogen in periodic table, Occurrence of hydrogen (Dihydrogen)
			22-Jan-24	Wed	2	Isotopes of hydrogen, preparation of dihydrogen, properties of dihydrogen,Uses of dihydrogen
			23-Jan-24	Thur	3	Alkali metals & elements of group 2: Electronic configuration, trends in atomic & physical properties
			24-Jan-24	Fri	4	Chemical properties of elements of group 1& group 2
			25-Jan-24	Sat	5	Uses of elements of group 1& group 2 Biological importance of Na, K, Mg & Ca
			25-Jan-24	Sat	6	Some important compounds of elements of s-block : Sodium carbonate,Sodium hydroxide
			27-Jan-24	Mon	7	Some important compounds of elements of s-block : Calcium carbonate, hydrogen peroxide
			28-Jan-24	Tue	8	Lithium aluminium hydride
Feb-25	**10**	**States of matter**	29-Jan-24	Wed	1	Introduction, Intermolecular Forces : Dipole dipole, Ion dipole, Dipole-Induced dipole Interactions
			30-Jan-24	Thur	2	London Dispersion Force, Hydrogen Bonding
			31-Jan-24	Fri	3	Intermolecular forces and thermal energy, Characteristic properties of Gases
			3-Feb-25	Mon	4	The Gas Law- Boyle's law (P& V relationship), Numericals
			4-Feb-25	Tue	5	The Gas Law- Charles's law (T & V relationship) ,Numericals
			5-Feb-25	Wed	6	The Gas Law-Gay Lussac's law (P & T relationship), Numericals
			6-Feb-25	Thur	7	Avogadro law, Ideal gas equation, Values of 'R' in different Units, Numericals
			7-Feb-25	Fri	8	Combined gas law, Relation between Density , Molar mass & pressure of a gaseous substance, Numericals
			8-Feb-25	Sat	9	Dalton's law of Partial Pressure , Kinetic Molecular Theory of gases : Assumptions
Feb-25	**6**	**Redox reaction**	10-Feb-25	Mon	1	Introduction, Oxidizing & reducing Agents,Redox reactions in terms of electron transfer
			11-Feb-25	Tue	2	Oxidation number, Rules to assign oxidation number, Stock notation,
			12-Feb-25	Wed	3	Redox reactions in terms of oxidation number, Identify Oxidant & Reductant From Redox reaction
			13-Feb-25	Thur	4	Balancing of redox reactions by oxidation number method
			14-Feb-25	Fri	5	Balancing Chemical equations by Ion electron Method Method,
			17-Feb-25	Mon	6	Redox Reaction and electrode potential, standard electrode potential
			18-Feb-25	Tue	1	Introduction- Allkane- Structural formula, Isomerism, Conformations of ethane

Mar-25	**15**	**Hydrocarbons**	20-Feb-25	Thur	2	Nomenclature
			21-Feb-25	Fri	3	Methods of preparation
			22-Feb-25	Sat	4	Chemical Properties of alkanes,Uses of alkanes
			24-Feb-25	Mon	5	Introduction, Electronic Structure of ethene, Isomerism in alkenes
			25-Feb-25	Tue	6	Nomenclature of alkenes, Methods of prepartion of alkenes
			28-Feb-25	Fri	8	Chemical properties of alkenes, Uses of alkenes
			3-Mar-25	Mon	9	Introduction of alkynes, electronic structure of ethyne, Nomenclature of alkynes,
			4-Mar-25	Tue	10	Methods of prepartion, Physical properties
			5-Mar-25	Wed	11	Chemical Properties of alkynes, Uses of alkynes
			6-Mar-25	Thur	12	Introduction to Aromatic hydrocarbons, Benzene : structure, Stability of benzene
			7-Mar-25	Fri	13	Aromatic character, Huckel Rule ,Methods of preparation of benzene, Chemical properties of benzene
			8-Mar-25	Sat	14	Revision

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