Pimpri Chinchwad Education Trust's

S. B. Patil College of Science and Commerce

ACA/DI/37	**Teaching Plan (Academic year 23-24)**
Date : 23/09/ 2023	**Subject : Chemistry**
	XI- Science

Month	Lesson No	Lesson's Name	Date	Day	Topic no.	Topic/ Content
Aug-23	1	Some basic concepts of Chemistry	10-Aug-23	Thur	1	Introduction, Nature of Chemistry
			11-Aug-23	Fri	2	Properties of matter and their measurement
			12-Aug-23	Sat	3	Laws Of Chemical Combination,Law of conversation of mass,Law of Definite Proportations,Law of Multiple proportion,Gay Lussac law,Avagadro's law.
			14-Aug-23	Mon	4	Dalton Atomic Theory, Atomic & Molecular masses,Formula mass
			16-Aug-23	Wed	5	Mole Concept,Molar Masses
			17-Aug-23	Thur	6	Moles and Gases
			18-Aug-23	Fri	7	Numericals
	2	Introduction to Analytical Chemistry	21-Aug-23	Mon	1	Introduction,Analysis,Chemical methods of Qualitative and quantitative analysis
			22-Aug-23	Tue	2	Mathematical operation and error analysis ,Scientific notation,Numericals
			23-Aug-23	Wed	3	Precision & accuracy of Measurment,
			24-Aug-23	Thur	4	Significant figures, Rules for deciding Significant figures,Calculations with Significant figures
			25-Aug-23	Fri	5	Determination of molecular formula,Percentage composition & empirical formula
			26-Aug-23	Sat	6	Chemical reactions and stoichiometric calculations ,Problems
			28-Aug-23	Mon	7	Limiting reagents,Concentration of solution : Mass percent(w/w%)
			29-Aug-23	Tue	8	Mole fraction(x),Molarity(M),Molality (m)
			31-Aug-23	Thur	9	Use of graph in analysis
			1-Sep-23	Fri	1	Subatomic particles: Discovery of Proton,electron and Neutron
			4-Sep-23	Mon	2	Atomic number and atomic mass number
			5-Sep-23	Tue	3	Isotopes, Isobars & Isotones
			6-Sep-23	Wed	4	Drawbacks of Rutherford atomic model, Wave particle duality, Characteristic of electromagnetic wave

Sep-23	**4**	**Structure of atom**	7-Sep-23	Thur	5	Developments leading to the Bohr' atomic model: , Line emission spectrum of hydrogen
			8-Sep-23	Fri	6	Bohr's model of Hydrogen atom: Postulates of Bohr atomic theory, Results of Bohr's theory,
			9-Sep-23	Sat	7	Explanation of the line spectrum of hydrogen using Bohr theory, Limitations of Bohr model, Reasons for failure of the Bohr model
			11-Sep-23	Mon	8	Quantum mechanical model of atom: Schrodinger equation
			12-Sep-23	Tue		Revision
			20-Sep-23	Wed	9	Atomic orbitals and quantum numbers,
			21-Sep-23	Thur	10	Shapes of atomic orbitals
			22-Sep-23	Fri	11	Energies of orbitals, Aufbau principle
			23-Sep-23	Sat	12	Electronic configuration of atoms and its representation
			25-Sep-23	Mon	13	Condensed orbital notation of electronic configuration, Isoelectronic species
Oct-23	**7**	**Modern Periodic table**	26-Sep-23	Tue	1	Introduction, Development of periodic table, Structure of modern periodic table
			27-Sep-23	Wed	2	Electronic configuration in periods and groups
			29-Sep-23	Fri	3	Blockwise characteristics of elements
			3-Oct-23	Tue	4	Periodic trends in elemental properties :Effective nuclear charge & screening effect
			4-Oct-23	Wed	5	Periodic trends in physical properties : Atomic radius, Ionic radius, Ionization enthalpy, Electron gain enthalpy, Electronegativity.
			5-Oct-23	Thur	6	Periodic trends in chemical properties : Valency, Metallic-nonmetallic character, chemical reactivity
	5	**Chemical Bonding**	6-Oct-23	Fri	1	Introduction, octet rule, Ionic bond
			9-Oct-23	Mon	2	Ionic solids and lattice enthalpy, Covalent bond, , Resonance
			10-Oct-23	Tue	3	Lewis structure, Formal charge, Limitations of octet rule
			11-Oct-23	Wed	4	VSEPR Theory
			12-Oct-23	Thur	5	VBT Theory : Postulates, Interacting forces during covalent bond formation, Overlap of atomic orbitals
			13-Oct-23	Fri	6	Hybridisation, Types of hybridisation and geometry of molecules,
			14-Oct-23	Sat	7	Importance of V.B.T., limitations of V.B.T.
			16-Oct-23	Mon	8	Molecular orbital theory, Hydrogen bonding
			17-Oct-23	Tue	9	Polar character of covalent bond, Covalent character of ionic bond, Valence bond Theory,
			18-Oct-23	Wed	10	Formal charge,Limitations of octet rule, Valence bond theory: Postulates of valence bond theory,
			19-Oct-23	Thur	11	Interacting forces during covalent bond formation, Overlap of atomic orbitals,

			20-Oct-23	Fri	12	Valence shell electron pair repulsion theory, Hybridisation, Geometry of molecules
			23-Oct-23	Mon	13	Valence shell electron pair repulsion theory
			25-Oct-23	Wed	14	parameters of covalent bond, Polarity of a covalent bond
			26-Oct-23	Thur	15	Dipole moment, Covalent character of ionic bond, Resonance
			27-Oct-23	Fri		Revision
			28-Oct-23	Sat		Revision
			30-Oct-23	Mon		Revision
Nov-23	**16**	**Chemistry in Everyday Life**	20-Nov-23	Mon	1	Basics of food chemistry
			21-Nov-23	Tue	2	Compounds with medicinal properties : Analgesics, Antipyretics, Antimicrobials
			22-Nov-23	Wed	3	Cleansing agents
	11	**Adsorption and colloids**	23-Nov-23	Thur	1	Introduction, Adsorption , Desorption, sorption, Physisorption, Chemisorption
			24-Nov-23	Fri	2	Factors affecting adsorption of gases on solids
			24-Nov-23	Fri	3	Applications of adsorption
			25-Nov-23	Sat	4	Catalysis
			28-Nov-23	Tue	5	Colloids- introduction, colloidal state, classification of colloids, Preparation & Purification of colloids
			29-Nov-23	Wed	6	Propertiesof colloidal dispersion
			30-Nov-23	Thur	7	Emulsions , Types & properties of emulsions, Applications of colloids
Dec-23	**3**	**Some Analytical Techniques**	1-Dec-23	Fri	1	Introduction
			4-Dec-23	Mon	2	Purification of solids: Crystallization, Fractional Crystallization
			5-Dec-23	Tue	3	Simple Distillation,Fractional distillation, Distillation under reduced pressure
			6-Dec-23	Wed	4	Solvent extraction, Chromatography Techniques:Adsorption Chromatography
			7-Dec-23	Thur	5	Column chromatography,
			8-Dec-23	Fri	6	Thin layer chromatography, Retention factor
	14	**Basic principles of organic chemistry**	9-Dec-23	Sat	1	Introduction, Structural representation of organic compounds, Condensed formula, Bond line formula or zig-zag formula
			11-Dec-23	Mon	2	Drawing the molecules in the three dimensions, Wedge formula, Fischer projection formula, Newman projection formula, Sawhorse or andiron or perpective formula
			11-Dec-23	Mon	3	Classification of organic compounds, classification based on carbon skeleton, classification based on functional group
			15-Dec-23	Fri	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-23	Mon	5	Rules for IUPAC nomenclature of branched saturated hydrocarbons, IUPAC nomenclature of unsaturated hydrocarbons, IUPAC names of simple monocyclic hydrocarbons,

			19-Dec-23	Tue	6	Naming monofunctional compounds
			20-Dec-23	Wed	7	IUPAC nomenclature ofcompounds containing one or more functional group,
			21-Dec-23	Thur	8	IUPAC nomenclature of substituted benzene
			22-Dec-23	Fri	9	Isomerism, structural isomerism
			23-Dec-23	Sat	10	Theoretical basis of organic reactions, Types of cleavage of covalent bond,
			26-Dec-23	Tue	11	Types of reagent, Electronic effects in organic reaction , inductive effect
			27-Dec-23	Wed	12	Resonanace, Resonance structures, Resonanace effect, Hyperconjugation
Jan-24	**15**	**Hydrocarbons**	28-Dec-23	Thur	1	Introduction- Allkane- Structural formula, Isomerism, Conformations of ethane
			29-Dec-23	Fri	2	Nomenclature
			30-Dec-23	Sat	3	Methods of preparation
			2-Jan-24	Tue	4	Chemical Properties of alkanes,Uses of alkanes
			3-Jan-24	Wed	5	Introduction, Electronic Structure of ethene, Isomerism in alkenes
			4-Jan-24	Thur	6	Nomenclature of alkenes, Methods of prepartion of alkenes
			5-Jan-24	Fri	8	Chemical properties of alkenes, Uses of alkenes
			8-Jan-24	Mon	9	Introduction of alkynes, electronic structure of ethyne, Nomenclature of alkynes,
			9-Jan-24	Tue	10	Methods of prepartion, Physical properties
			10-Jan-24	Wed	11	Chemical Properties of alkynes, Uses of alkynes
			11-Jan-24	Thur	12	Introduction to Aromatic hydrocarbons, Benzene : structure, Stability of benzene
			12-Jan-24	Fri	13	Aromatic character, Huckel Rule
			13-Jan-24	Sat	14	Methods of preparation of benzene, Chemical properties of benzene
	8	**Elements of Group 1 and 2**	16-Jan-24	Tue	1	Introduction, position of hydrogen in periodic table, Occurrence of hydrogen (Dihydrogen)
			17-Jan-24	Wed	2	Isotopes of hydrogen, preparation of dihydrogen, properties of dihydrogen,Uses of dihydrogen
			18-Jan-24	Thur	3	Alkali metals & elements of group 2: Electronic configuration, trends in atomic & physical properties
			19-Jan-24	Fri	4	Chemical properties of elements of group 1& group 2
			27-Jan-24	Sat	5	Uses of elements of group 1& group 2 Biological importance of Na, K, Mg & Ca
			29-Jan-24	Mon	6	Some important compounds of elements of s-block : Sodium carbonate,Sodium hydroxide
			30-Jan-24	Tue	7	Some important compounds of elements of s-block : Calcium carbonate, hydrogen peroxide
			31-Jan-24	Wed	8	Lithium aluminium hydride
			1-Feb-24	Thur	1	Introduction, Electronic configuration of elements of groups 13,14 & 15
			2-Feb-24	Fri	2	Trends in atomic & physical propertiesof elements of group 13,14 & 15

	9	Elements of Group 13,14 and 15	5-Feb-24	Mon	3	Chemical propertiesof elements of group 13,14 & 15 : Reaction towards air, water and halogens
			6-Feb-24	Tue	4	Catenation, Allotropy, Allotropes of carbon
			7-Feb-24	Wed	5	Allotropes of phosphorus
			8-Feb-24	Thur	6	Molecular structures of some important compounds of the group 13,14 and 15 elements
			9-Feb-24	Fri	7	Chemistry of notable compounds of elements of group 13,14 and 15 : Borax, silicones
			10-Feb-24	Sat	8	Ammonia : Preparation and chemical properties
Feb-24	10	States of matter	12-Feb-24	Mon	1	Introduction, Intermolecular Forces : Dipole dipole, Ion dipole, Dipole-Induced dipole Interactions
			13-Feb-24	Tue	2	London Dispersion Force, Hydrogen Bonding
			14-Feb-24	Wed	3	Intermolecular forces and thermal energy, Characteristic properties of Gases
			15-Feb-24	Thur	4	The Gas Law- Boyle's law (P& V relationship), Numericals
			16-Feb-24	Fri	5	The Gas Law- Charles's law (T & V relationship) ,Numericals
			20-Feb-24	Tue	6	The Gas Law-Gay Lussac's law (P & T relationship), Numericals
			21-Feb-24	Wed	7	Avogadro law, Ideal gas equation, Values of 'R' in different Units, Numericals
			22-Feb-24	Thur	8	Combined gas law, Relation between Density , Molar mass & pressure of a gaseous substance, Numericals
			23-Feb-24	Fri	9	Dalton's law of Partial Pressure , Kinetic Molecular Theory of gases : Assumptions
	6	Redox reaction	24-Feb-24	Sat	1	Introduction, Oxidizing & reducing Agents,Redox reactions in terms of electron transfer
			24-Feb-24	Sat	2	Oxidation number, Rules to assign oxidation number, Stock notation,
			26-Feb-24	Mon	3	Redox reactions in terms of oxidation number, Identify Oxidant & Reductant From Redox reaction
			27-Feb-24	Tue	4	Balancing of redox reactions by oxidation number method
			28-Feb-24	Wed	5	Balancing Chemical equations by Ion electron Method Method,
			29-Feb-24	Thur	6	Redox Reaction and electrode potential, standard electrode potential
Mar-24	13	Nuclear Chemistry and Radioactivity	1-Mar-24	Fri	1	Introduction to nuclear chemistry, Classification of nuclides
			4-Mar-23	Mon	2	Nuclear binding energy and mass defect
			5-Mar-23	Tue	3	Radioactivity, Radioactive decay, Rate of decay, Rate law, Expression for decay constant
			6-Mar-23	Wed	4	Half life of radioactive element, Graphical representation, Numericals
			7-Mar-23	Thur	5	Units of radioactivity, Modes of decay , Nuclear reactions,Artificial radioactivity
			8-Mar-23	Fri	6	Nuclear fission, Nuclear fusion, Applications of Radio isotopes
			8-Mar-23	Fri	7	Electrical energy from Nuclear fission, Applications in medicine, Other applications of radioisotopes

	12	**chemical equilibrium**	9-Mar-23	Sat	1	Introduction, Equilibrium in physical and chemical processes
			9-Mar-23	Sat	2	Law of mass action, Equilibrium constant, Relationship between Kp & Kc
			11-Mar-23	Mon	3	Homogeneous & Heterogeneous equilibria
			12-Mar-23	Tue	4	Calculation of equilibrium concentrations
			13-Mar-23	Wed	5	factors affecting equlibrium, Le Chatelier's principle

Mrs Kanchan Patil
Mrs. Bhagyashree Dhopate
Mrs. Anita Madhekar
Chemistry lecturer
(SBPCSC)

Mrs Kalyani Bhondave
Academic Co-ordinator
(SBPCSC)

Mr S. N Patil
Principal(SBPCSC)