St. Xaviers School

Syllabus and Lesson Planner

Class	X	Syllabus		
Subject	CHEMISTRY			
Ch. No.	Name of Chapter	Topic	Month	Week
1	PERIODIC TABLE - PERIODIC PROPERTIES& VARIATIONS OF PROPERTIES.	Periodic properties & their variations in groups & periods.	March	1
		Periodicity on the basis of atomic number for elements.	April	2
2	CHEMICAL BONDING.	Electrovalent Bonding: Electron dot structure of electrovalent compounds -NaCl, MgCl2, CaO.	May	1
		Characteristic properties of electrovalent compounds.		
		Covalent Bonding: Electron dot structure of covalent molecules - H2, Cl2, N2, NH3, CCl4,CH4.		
		Polar covalent compounds		
		Characteristic properties of covalent compounds: comparison of electrovalent & covalent compounds: Coordinate bonding		
3	ACIDS, BASES AND SALTS.	Simple definitions in term of the molecules & their characteristics properties.	June	2
		Ions present in mineral acids, alkalis & salts & their solutions.		
		Use of litmus & pH paper to test for acidity and alkalinity.		
		Definitions of salt - Types of salts; Action of dilute acids - on salts.		
4	ANALYTICAL CHEMISTRY - USE OF AMMONIUM & SODIUM HYDROXIDE.	Action of ammonium hydroxide & sodium hydroxide on solution of salts, colour of salt & its solution.	July	2
		Formation & colour of - hydroxide precipitated for solutions of salts of Ca, Fe, Cu, Zn & Pb.		
		Special action of ammonium hydroxide on solutions of copper salt & sodium hydroxide on ammonium salts.		
		Action of alkalis (NaOH, KOH) on certain metals, their oxides & hydroxides.		
5	MOLE CONCEPT & STOICHIOMETRY.	Idea of mole, Avogadro's Law, Gay Lussac's Law of Combining Volumes, Understanding molar volume, Simple calculations based on based on molar voume and Gay Lussac's law	July	2
		Refer to the atomicity of hydrogen, oxygen nitrogen & chlorine	Augus t	2
		Vapour density & its relation to relative molecular mass		
		Mole and its relation to mass.		
		Simple calculations based on chemical equations.		
6	ELECTROLYSIS.	Electrolytes & non - electrolytes.	August	2
		Substances containing molecules only, ions only, both molecules and ions.	Sept	1
		Definition & explanation of electrolysis, electrolyte, electrode, anode, cathode, anion, cation, oxidation & reduction(on the basis of loss & gain of electrons).		
		An elementary study of the migration of ions,with reference to the factors influencing selective discharge of ions illustrated by the electrolysis of molten lead bromide, acidified water with platinum electrodes and aqueous copper [II] sulphate with copper electrodes		

		Applications of electrolysis: Electroplating with nickel & silver, choice of electrolyte for electroplating, electrorefining of copper.		
	Chapter 1 to 6	REVISION		
7	METALLURGY.	I. Occurence of metal in nature: 1. mineral & ore - meaning only 2. Common ores of - aluminium, iron & zinc	Sept	1
		I. Occurence of metal in nature: 1. mineral & ore - meaning only 2. Common ores of - aluminium, iron & zinc	Oct	3
		III. Extraction of Aluminium - 1. Chemical method for purifying bauxite by using NaOH - Baeyer's Process. 2. Electrolytic extrction - Hall Heroult's process.		
		IV. Alloys - Composition and uses of stainless steel, duralumin, brass bronze, fuse metal/solder.		
8	STUDY OF COMPOUNDS: HYDROGEN CHLORIDE, AMMONIA, NITRIC ACID, SULPHURIC ACID.	Preparation of HCl from NaCl; Simple experiment to show the density of HCl gas.	Nov.	3
		Preparation of HCl from NaCl; Simple experiment to show the density of HCl gas.		
		Preparation of HCl from NaCl; Simple experiment to show the density of HCl gas.		
		Preparation of HCl from NaCl; Simple experiment to show the density of HCl gas.		
		Laborarory preparation of nitric acid from potassium nitrate or sodium nitrate, large scale preparation of nitric acid by Ostwald's process. As an oxidising agent: its reaction with copper, carbon & sulphur. Manufacture of sulphuric acid by Contact process, its behaviour as an acid when dilute, concentrated sulphuric as a dehydrating agent (the dehydration of sugar and copper [II]sulphate crystals. Non-volatile nature of sulphuric acid (reaction with NaNO3 or KNO3)		
9	ORGANIC CHEMISTRY.	Introduction to organic compounds, unique nature of carbon atom- tetra valency , catenation. Formation of single , double & triple bonds, straight chain, branched chain, cyclic compounds (only benzene).	Dec	2
		Structure & Isomerism upto 5 carbon atoms, chain & position isomerism, homologous series, simple nomenclature.		
		Hydrocarbons: Alkanes, Alkenes, Alkynes, alcohols and carboxylic acids		