CHEMISTRY

Atomic number, electron configuration of elements, Autban principle Humid's multiplicity Rule, Paul's exclusion principle long form of the periodic classification of elements, salient characteristic of 's', 'p', 'd' and 'f' block elements.

Atomic and ionic radii, ionization, potential, electron affinity and electronegativity, their variation with the position of the element in the periodic table.

Natural and artificial, radioactivity, the theory of disintegration, Disintegration and displacement law's radioactivity series nuclear binding energy, nuclear reaction fission and fusion, radioactivity isotopes and their use.

Electronic theory of valency elementary ideas about sigma and pi-bonds hybridization and directional nature of covalent bonds. Shapes of simple molecules bond order and bond length.

Oxidation state and oxidation number, common redoxication some equations,

Bronsted and Lewis theories of acids and bases.

Chemistry of common elements and their compound, treated from the point of view of periodic classification.

Principle of extraction of metals as illustrated by sodium, copper, aluminium, iron and nickel,

Wemer's theories of coordination compounds and types of isomerism and 6 and 4 coordinate complexes. Role of coordination compounds in nature common metallurgical and analytical operation,

Structure of diborone, aluminium, chloride ferrocence. Alleye meganism halides, disholodiamine-platinum and xenon chloride.

Common ion effect, solubility products and their application in qualitative inorganic analysis.

Electron displacement-Inductive, mesomatic and hyperon-jugative effects-effect of structure on dissociation constraints of acids bases-bond formation and bond fission of covalent bonds-reaction intermediates carbocations, carbonions, free radicals and carbon-nuclephiles and electrophiles.

Alkanes, Alkenes and Alkynes-petroleum as a sources of organic compounds-simple derivative of alphatic compounds halides, alcohol, aldehydes,ketones acids, esters and chlorides, amides anhydrides, other amines and introcompounds monohydroxy rhetoric and amino acids-grignard's reagentsactive, methylene group malonic and accta acetic esters and their synthetic uses-unsaturated acids.

Stereochemistry elements of symmetry chirality's optical isomerism and lactic and tartaric acids. D.l notation, R.S. notation of compounds containing chloral centres, concept of conformation Tischer, sawhorse and Newman projections of butane-2,3 diolgeometrical isomerism of maleic and fumaric acids, E and Z notation of geometrical isomers.

Carbohydrates : Classification and general reactions structure of glucose, fructose and sucrose, general idea on the chemistry of starch and cellulose,

Benzene and common monofunctional benzenoid compounds, concepts of aromaticity as applied by benzenaphithatlence and pyrole-orientation influence in aromatic substances-chemistry and uses of diazonium salt.

Elementary idea of the chemistry of oils fat protein and vitamins-their role in nutrition and industry.

Basic principles underlying spectral techniques (UV visible, IR Raman and NMR) Kinetic, theory of gases and gas laws. Maxwells law of distribution of velocities. Varder-

Waal's equation law of corresponding states, specific heat of gases, ration CP/CV, thermodynamics, the first law of the thermodynamics, isothermal and adiabatic expansions, enthalpy heat capacity and thermo-chemistry, heat of reaction, calculation and bond energies Krichoffs equation, criteria for spontaneous changes, second laws of thermodynamics, entropy free energy, criteria for chemical equilibrium.

Solution : Osmotic pressure lowering of vapour pressure, depression or freezing point and elevation of boiling point, Determination of molecular weight in solution, association and dissociation of solute.

Chemical equilibrium : Laws of mass action and its application of homogeneous and heterogeneous equilibrium, Le'Chateler's principle and its application to chemical equilibrist.

Chemical Kinetics : Molecularity and order of reaction, first order and second order reactions. Temperature coefficient and energy activation, Collision theory of reaction rates qualitative treatment of theory of activated compounds.

Electrochemistry : Faradays' laws of electrolysis, conductivity of an electrolyte, equivalent conductivity and its variation with dilution. Solubility of sparingly soluble salts Electrolytic dissociation Ostwald's dilutions law, normality of strong electrolytes solubility products, strength of acids and bases. Hydrolysis of salt hydrogen ion concentration, Buffer action, Theory of indicators.

Reversible cell : Standard hydrogen and calomel electrodes, Redox potentials concentration cells, ionic product of water, potentiometric titrations.

Phase Role : Explanation of term involve. Application to one and two component system. Distribution law.

Colloids : General nature of colloidal solutions and their classification, coagulation, protective action and Gold number.

Absorption :

Catalysis : Homogeneous and heterogeneous catalysis promoters and poisons.