

CHEMISTRY

CLASS XI

1 Chemical bonding and molecular structure

Lewis symbols, Octet rule and its limitations, covalent bond, electrovalent bond, formal charge, Bond parameters, Dipole moment and its Applications, Dipole moment of NF_3 < NH_3 , Shape of molecules on the basis of VSEPR, VBT, Formation of H_2 and non formation of He_2 on the basis of VBT, difference between sigma and Pi bond, Hybridisation and its applications, types of hybridisation, Shape of molecules on the basis of hybridisation, MOT, molecular orbital diagram of molecules/molecular ions, Hydrogen bonding and its types

NCERT Ex: 4.2, 4.3, 4.4, 4.5, 4.7, 4.15, 4.22, 4.23, 4.24, 4.28, 4.35, 4.39, 4.40

2 Thermodynamics

Internal energy, First law of thermodynamics, Enthalpy, Change in enthalpy, Relation between ΔH and ΔU , Heat capacity, Specific and molar heat capacity, relationship between C_p and C_v , Numericals on Standard enthalpy of reactions and its types, Entropy, Spontaneity in terms of entropy change, Gibbs free energy

NCERT Ex: 6.7, 6.12, 6.14, 6.15, 6.16, 6.18, and Numericals solved in the class

3 Equilibrium

Physical and chemical equilibria, Law of mass action, law of chemical equilibrium, relationship between K_p and K_c , Le Chatelier's principle, Effect of change of concentration, effect of change of temperature effect of change of pressure, applications of Le Chatelier's principle, Ostwald's dilution law, Various concepts of acids and bases, Ionic product of water, salt hydrolysis, degree of hydrolysis, solubility product, Common ion Effect, applications of solubility product and common Ion effect, buffer solution, types of buffer solutions, buffer action of acidic buffer, buffer action of basic buffer, numerical based on the above topics

4 Hydrogen

Position of hydrogen in the periodic table, isotopes of hydrogen, Synthesis gas, water Gas Shift the reaction, chemical properties of hydrogen, hydrides and their types, structure of water and eyes, Amphoteric nature of water, Hard and soft water, types of hardness of water, softening of water by using Clark's method, permutit process, Synthetic resins method, Structure of hydrogen peroxide, chemical properties of hydrogen peroxide, hydrogen economy.

NCERT exercises: 9.1, 9.6, 9.8, 9.18, 9.21, 9.22, 9.24, 9.25, 9.26, 9.35, 9.36

5 The S Block elements

Chapter related worksheet given And book exercise

6 The P Block elements

Chapter related worksheet given And book exercise

7 Hydrocarbons

Classification of hydrocarbons, Nomenclatural and isomerism of alkanes, preparation of alkanes: from unsaturated hydrocarbons, Wurtz reaction, Corey house reaction, Kolbe's electrolytic method, Physical properties of alkanes, chemical properties of alkanes: Halogenation, isomerisation, aromatisation, pyrolysis, conformations of ethane

Geometrical isomerism of alkenes, Preparation of alkenes, Chemical reactions of alkenes: Addition of halogens, addition of halogen halides To symmetrical and unsymmetrical Alkenes i.e Markovnikov's rule and anti markovnikov's rule Mechanism, oxidation of alkenes, ozonolysis, polymerisation, preparation of alkynes, Chemical properties of alkynes, Nomenclatural and isomerism of Arenes, Structure of benzene, aromaticity and huckle rule, Preparation of benzene and its Chemical properties: Nitration, halogenation, sulphonation, Friedel crafts alkylation and acylation, Mechanism of electrophilic substitution reactions

NCERT book exercise: 13.5, 13.1, 13.6, 13.7, 13.9, 13.11, 13.13, 13.15, 13.16, 13.19, 13.23, 13.25
