Chemistry SYLLABUS: Class-XI & XII		
	Unit -1 Atomic Structure	
Contents	CONCEPT	
Introduction to Structure of Atom	Dalton's atomic theory	
	Thomson model	
Atomic models	Rutherford model	
	Bohr model	
	Dual behavior of Matter	
	Concept of orbitals Heisenberg's	
Quantum Mechanical Model	uncertainty principle	
	Quantum numbers	
Shapes of Atomic Orbitals	Shape of s, p and d orbitals	
	Node and nodal surface	
	Shielding effect	
Rules for Filling Electrons in Orbitals	Aufbau principle	
	Pauli's exclusion principle	
	Hund's rule Electronic configuration of atoms	
Stability of Completely Filled and half-filled Orbitals		
han-inted Orbitals	Unit-2 Chemical Bonding	
Types of Chemical	Ionic bond	
Bonds	Covalent bond	
50103	Polar covalent bond	
	Hybridization	
Valence Bond Theory	VSEPR theory	
	Resonance	
Molecular Orbital Theory	Magnetic characteristics	
	Bond order	
Hydrogen Bond	Intermolecular hydrogen bonding	
	Intramolecular hydrogen bonding Unit-3 States of Matter: Gases and Liquids	
	Types of intermolecular forces	
Intermolecular Forces	Nature of intermolecular forces	
	Boyle's law	
Leure Courseine Cooreaux State	Charles law	
Laws Governing Gaseous State	Gay-lussac	
	Avogadro law	
	Ideal gas equation	
Ideal Behaviour	Dalton's law of partial pressure	
	Kinetic theory of gases pressure	
Deviation from Ideal Behaviour	Compressibility factor	
Liquefaction of Gases	Boyle's Temperature Critical temperature, critical pressure and critical volume	
Eigheiaction of Gases	Vapour pressure	
Liquid State	Viscosity	
	Surface tension	
	Unit-4 Thermodynamics	
	Concepts of :	
Thermodynamic Terms	system, surrounding	
	types of system	
	state of a system	
	state function and path function	
	extensive and intensive properties	
	reversible and irreversible process	
Thermodynamic Quantities	Work Heat	
First Law of Thermodynamics	Internal Energy	
	Enthalpy	
	Heat capacity	
	Measurement of 4	
	Measurement of 4	
Thermochemistry	Enthalpy change in a chemical reaction	
	Endothermic and	
	Exothermic reactions	
	Standard enthalpy of reactions	
	Enthalpy changes during phase transformations	
	Standard enthalpy of formation	
	Thermochemical equations Hess's Law of Constant Heat Summation	
	Enthalpies for different types of reactions	
	Entropy	
Constanting	Second law of Thermodynamics	
Spontaneity	Gibb's energy change for spontaneous and non-spontaneous processes	
	Criteria for equilibrium	
Third Law of Thermodynamics		
Thru Law of Thermouynamics		

Units Chemical Equilibrium Inroduction to Equilibrium Solid - local equilibrium Equilibrium in Physical Processes Solid - local equilibrium Equilibrium in Physical Processes Solid - local equilibrium Equilibrium in Chemical Processes Solid - adaption of solid and agaes in liquids Equilibrium in Chemical Processes Solid - adaption of solid and agaes in liquids Applications of Equilibrium constant Pradication the equilibrium Applications of Equilibrium constant Pradication the equilibrium Applications of Equilibrium Constant Pradication the extent of a neaction Applications of Equilibrium Constant Pradication the extent of a neaction Applications of Equilibrium in Solution Acids, bates and sats Ionization of Acids and Bases Ionization of Recting add strength Equilibrium to Solid State Common ion effect Chemistry Common ion effect of solubility of nine satts Crystal Lattices and Unit Cells Pradication the extent of a cable on the procession Crystal Lattices and Unit Cells Pradication the admonthy inclusion Construction constructions in per unit Cell in a cubic unit cell Cable admonthy of solid State Constructions on pering o
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Raoult's Law
Solutions on the basis of Raoult's Non Ideal solutions
Law Positive deviation Negative deviation
Relative lowering of vapour pressure
Colligative Properties Depression of freezing point
Osmotic pressure
Determination of molecular masses using colligative properties Abnormal Molecular Mass van't Hoff Factor – Numericals based on the above
Unit-8 Redox reactions and Electrochemistry
Oxidation and Reduction Reactions
Redox Reactions in Terms of Electron Mechanism of redox reactions by electron transfer process Transfer Reactions Evolution of the electrochemical series.
Oxidation Number Calculation of oxidation number
Types of Redox Reactions Oxidation number method
Balancing of Redox Reactions Half reaction
Method Types of Electrochemical Cells Electrolytic cells
Galvanic cells
Electrolysis Sign conventions at anode and cathode
Laws of electrolysis
Metallic and electrolytic conductance Types of electrolytes
Conductance
Conductance in Electrolytic Solutions Resistance Molar conductivity
Variation of conductivity with concentration
Kohlrausch's law EMF of a cell
Galvanic Cells Standard electrode potential
Galvanic Cells Standard electrode potential Nernst equation and its application to chemical cells Relation between Gibbs energy change and emf of a cell

	Unit-9 s- Block & p-Block Elements and metallurgy
	Electronic configuration
S-Block Elements Group 1 Elements & Group 2 Elements	Physical Properties Chemical properties
	Position of hydrogen in the periodic table
	Diagonal relationship Biological importance
	Water and hydrogen peroxide
	Some Alkali metal compounds Some Alkaline earth metal compounds
P-Block Elements Group 13, 14, 15,	Electronic configuration
16, 17 and 18 Elements	Occurrence Inert pair effect Reactivity Some compounds of Group 13 to 18 elements
	Unit-10 d and f - Block Elements and Coordination Compounds
	General properties of 3d elements. Electronic configuration
d-Block elements	Variable valency concept Color
	Magnetic properties Catalytic properties
	Compounds
F-Block Elements	Electronic configuration Oxidation states
	Lanthanide contraction
Coordination Compounds	General composition Coordination number
	Types of ligands
IUPAC Nomenclature of Coordination	Werner theory IUPAC rules
Compounds Valence Bond Theory as Applied to	Valence bond theory
Coordination Compounds	Crystal field theory
Importance of Coordination	Analytical applications Industrial applications
Compounds	Biological applications
	Unit-11 Surface Chemistry Physisorption
Adsorption on a Surface	Chemisorption
	Factors affecting the adsorption of gases on solids Homogenous and heterogeneous catalysis
Catalysis	Shape selective catalysis
	Enzyme catalysis Distinction between true solution, colloid and suspension
C-11-14-	Classification of colloids
Colloids	Properties of colloids: Mechanical, Optical, Electrical Hardy-Schulze rule
	application of colloids
Rate of Chemical Reaction	Unit-12 Chemical Kinetics Average rate of reaction
	Instantaneous rate of reaction
Factors Affecting Rate of a Reaction	Concentration of reactants, temperature, catalyst, nature of reactants, pressure (gases), presence of light, surface area of the reactants
Factors Affecting Rate of a Reaction	Rate Law and Specific Rate Constant Order And Molecularity
Integrated Rate Equations and Half	Zero order reactions
life	First order reactions Pseudo First order reaction
Temperature Dependence of Rate of	Activation
Reaction	Energy Arrhenius Equation
Collision Theory	
	Unit-13 Hydrocarbons, Haloalkanes and Haloarenes Types of hybridization in carbon compounds
Types of Hybridization of Carbon	Shapes of organic molecules
	Shapes of organic molecules 2D and 3D structural representation of organic compounds
	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure
Classification of Organic Compounds IUPAC Nomenclature of Organic	Shapes_of_organic_molecules 2D and 3D structural representation of organic compounds based_on_functional groups
Classification of Organic Compounds	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa
Classification of Organic Compounds IUPAC Nomenclature of Organic	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae
Classification of Organic Compounds IUPAC Nomenclature of Organic	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane)
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism (c/s and trans)
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Streachemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Optical isomerism
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbonation free radical
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structureal formula from a given IUPAC name and vice-versa Structural isomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation free radical Electrophilic and nucleophilic reagents
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction	Shapes of organic molecules 2D and 3D 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation Carbanion free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structure Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Structural isomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geemetrical isomerism Optical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation Free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structurel formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism (<i>cis</i> and <i>trans</i>) Optical isomerism Absolute and relative nomenclature of optical isomers carbonation free radical Electrophilic and nucleophilic reagents Types of organic reactions inductive effect electromeric effect resonance
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Streechemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism (<i>cis</i> and <i>trans</i>) Optical isomerism Absolute and relative nomenclature of optical isomers carbocation free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis)
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism (<i>cis</i> and <i>trans</i>) Optical isomerism Absolute and relative nomenclature of optical isomers carbonation free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups based on structure Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Structural isomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geemetrical isomerism Optical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation Carboration Free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Halogenation, Isomerisation, Oxidation, Aromatization, Combustion, Pyrolysis) Methods of preparation (Partial red
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Structural isomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation Garbanion free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Hucke's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Partial reduction, dehydrohalogenati on, dehydration, dehalogenation)
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Derivation of structure Priority order of functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism (<i>cis</i> and <i>trans</i>) Optical isomerism Carboardia Carboardia Gradical isomerism Carboardia Inductive effect Electronhilic and nucleophilic reagents Types of organic reactions inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Halogenation, Isomerisation, Oxidation, Aromatization, Combustion, Pyrolysis) Methods of preparation (Partial reduction, dehydrohalogenati on, dehydration, dehalogenation)
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms) Alkenes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Prefixes and suffixes for functional groups Derivation of structure Priority order of functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Structural isomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation Grabanion free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electrometric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Halogenation, Isomerisation, Oxidation, Aromatization, Combustion, Pyrolysis) Methods of preparation (Partial reduction, dehydrohalogenati on, dehydration, dehal
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Prefixes and suffixes for functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation free radical Electrophilic and nucleophilic reagents Types of organic reactions inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Partial reduction, dehydrohalogenati on, dehydration, dehalogenation) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, ozonolysis, oxidation and polymerization Physical properties Che
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms) Alkenes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Optical isomerism Absolute and relative nomenclature of optical isomers carbanion free radical Inductive effect electrombilic and nucleophilic reagents Types of organic reactions inductive effect electrometric effect resonance Nyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O condolysis, oxidation and polymerization Physical properties Chemical reactions (Addition of H2, X2, HX, and
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms) Alkenes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Priority order of functional groups Perfixes and suffixes for functional groups Derivation of structure Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation Garbanion free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule)
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms) Alkenes (Upto 5 Carbon Atoms) Alkynes (Upto 5 Carbon Atoms) Arenes	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Derivation of structure Priority order of functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geemetrical isomerism Absolute and relative nomenclature of optical isomers carboation carboanion free radical Electrophilic and nucleophilic reagents Types of organic reactions inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, ozonolysis, oxidation and polymerization Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's
Classification of Organic Compounds IUPAC Nomenclature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms) Alkenes (Upto 5 Carbon Atoms)	Shapes of organic molecules 2D and 3D structural representation of organic compounds based on functional groups Prefixes and suffixes for functional groups Prefixes and suffixes for functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation carbocation carbocation carbocation carbocation Carboration free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect resonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Halogenation, Isomerisation, Oxidation, Aromatization, Combustion, Pyrolysis) Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, ozonolysis, oxidation and polymerization Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, ozonolysis, oxidation and polymerization Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, ozonolysis, oxidation and polymerization Physical properties Chemical reactions (Addition of H2, X2, HX, and H2O and polymerization) Nomenclature, resonance and stability of benzene, orientation effect of substituents in benzene, preparation physical and chemical properties of benzene Structure of 1°, 2° and 3° haloalkanes and haloarenes Nomenclature
Classification of Organic Compounds IUPAC Nomenciature of Organic Compounds Stereochemistry and Isomerism Homolytic and Heterolytic Fission of a Covalent Bond Basics of Organic Reaction Electronic Displacements in a Covalent Bond Aromaticity Alkanes (Upto 5 Carbon Atoms) Alkenes (Upto 5 Carbon Atoms) Alkynes (Upto 5 Carbon Atoms) Arenes	Shapes of oranic molecules 2D and 3D structural representation of oraanic compounds based on functional groups Deside on functional groups Prefixes and suffixes for functional groups Derivation of structural formula from a given IUPAC name and vice-versa Structural isomerism Stereochemistry and stereoisomerism Projection formulae Interconversion of projection formulas Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Conformations and their relative stabilities (ethane and butane) Geometrical isomerism Absolute and relative nomenclature of optical isomers carbocation Carbanion free radical Electrophilic and nucleophilic reagents Types of organic reactions Inductive effect electromeric effect reesonance hyperconjugation Stability of aromatic compounds Huckel's rule Methods of preparation (Reduction, Wurtz reaction, Kolbe's electrolysis) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, azonolysis, oxidation and polymerization Methods of preparation (Partial reduction, dehydrohalogenati on, dehydration, dehalogenation) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, azonolysis, oxidation and polymerization Methods of preparation (Hvdrolysis of calcium carbide, dehydrohalo- genation) Physical properties Chemical reactions (Addition of H2, X2, Markovnikov's and anti-Markovnikov's rule) Addition of HX, and H2O, azonolysis, oxidation and polymerization Methods of preparation (Hvdrolysis of calcium carbide, dehydrohalo- genation) Physical properties Chemical reactions (Addition of H2, X2, HX, and H2O and polymerization) Nomenclature, resonance and stability of benzene, orientation effect of substituents in benzene, preparation physical and chemical properties of benzene Structure of 1°, 2° and 3° haloalkanes and haloarenes

	Unit-14 Oxygen containing Organic compounds
Structure	Structure of alcohols, phenols and ethers
	Classification
	Preparation of alcohols (hydration of alkenes, hydroboration- oxidation, reduction of carbonyl compounds,
Preparation of Alcohols and Phenols	from Grignard's reagent)
	Preparation of Phenols (from chlorobenzene, benzene and cumene)
	Physical Properties of Alcohols, Phenols and Ethers
Properties of Alcohols, Phenols and	
Ethers	Chemical Properties of Alcohols (with metals, esterification, esterification, with HX, dehydration)
Ethers	Chemical Properties of Phenols (halogenation, nitration and sulphonation, Kolbes Reimer - Tiemann,
	deoxygenation and oxidation)
Preparation of Ethers & chemical Properties	Preparation from alcohols
	Williamsons ether synthesis
	Ether cleavage by HX
	halogenation, nitration and Friedel crafts reaction
Structure of Aldehydes, Ketones and	
Carboxylic Acids	
Preparation of Aldehydes and	From alcohols
	From alkenes
	From alkynes
	From aromatic hydrocarbons
Ketones	Gattermann-Koch
	From acid chlorides
	From nitriles
	Physical Properties of aldehydes and ketones
Physical, Chemical Properties and	Chemical Properties of Aldehydes and Ketones (nucleophilic addition reactions, nucleophilic addition-
Uses of Aldehydes and Ketones	elimination reactions, reduction, oxidation, Aldol condensation, Cannizzarro reaction, electrophiclic
	substitution in aromatic aldehydes)
	Structure of carboxylic acid
Carboxylic acids	Preparation of carboxylic acids (by oxidation, hydrolysis, from Grignard reagents)
	Physical properties of carboxylic acids
	Chemical properties of carboxylic acids
Chrysettere	Unit-15 Nitrogen containing Organic compounds
Structure	
Preparation of Amines	By reduction of nitro compounds, nitriles and amides
Diversional and Channing Diversity of	Ammonolysis of alkyl halides
Physical and Chemical Properties of Amines Diazonium Salts	Physical Properties of Amines
	Chemical Properties of Amines
	Nomenclature
	Structure
	Methods of
	Preparation
	Physical properties
	Chemical Properties
	Structure and importance of azodyes and examples
	Unit-16 Bio-Molecules and Polymers
	Carbohydrates
Biomolecules	Amino acids and proteins
	Nucleic acids
	Vitamins
Polymers	Classification
	Methods of polymerization
	Preparation of Some polymers
	Unit-17 Chemistry in everyday life
	antacids, antihistamines, tranquilizers, analgesics, antimicrobials (antibiotics, antiseptics and
	disinfectants), antifertility drugs and chemotherapy
Chemicals in Medicines, Food and	food additives, artificial sweetening agents, preservatives and antioxidants
Hygiene (Soaps and Detergents)	saponification, Soaps & cleansing property
	detergents and bio-degradable detergents
	Unit-18 Environmental Chemistry
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For deserves askal	
Environmental	Environmental pollution
Environmental Pollution	Conservation of natural resources
Pollution	Conservation of natural resources Types of water pollutants
Pollution	Conservation of natural resources Types of water pollutants Treatment of water pollution
Pollution	Conservation of natural resources Types of water pollutants Treatment of water pollution BOD
Pollution	Conservation of natural resources Types of water pollutants Treatment of water pollution BOD Industrial and agricultural
	Conservation of natural resources Types of water pollutants Treatment of water pollution BOD
Pollution Water Pollution	Conservation of natural resources Types of water pollutants Treatment of water pollution BOD Industrial and agricultural
Pollution	Conservation of natural resources Types of water pollutants Treatment of water pollution BOD Industrial and agricultural chemicals that
Pollution Water Pollution	Conservation of natural resources Types of water pollutants Treatment of water pollution BOD Industrial and agricultural chemicals that cause environmental degradation