

Chapters	Topics (CUET)
Solid State	Classification of solids based on different binding forces:
	molecular
	ionic
	covalent
	metallic solids
	amorphous and crystalline solids(elementary idea)
	unit cell in two dimensional
	unit cell in three-dimensional lattices
	calculation of density of unit cell,
	packing in solids
	packing efficiency
	voids
	number of atoms per unit cell in a cubic unit cell
	point defects
	electrical properties
	magnetic properties
	Band theory of metals
	Band theory of conductors
Band theory of semiconductors	
Band theory of insulators	
n and p-type semiconductors.	
Solution	Types of solutions
	expression of concentration of solutions of solids in liquids
	the solubility of gases in liquids
	solid solutions
	colligative properties – the relative lowering of vapour pressure
	Raoult's law,
	elevation of B.P
	depression of freezing point
	osmotic pressure
	determination of molecular masses using colligative properties
	abnormal molecular mass
VantHoffactor	
Electrochemistry	Redox reaction
	conductance in electrolytic solutions,
	specific and molar conductivity variations of conductivity with concentration
	Kohlrausch's Law
	electrolysis
	laws of electrolysis (elementary idea)
	dry cell – electrolytic cell
	dry cell - Galvanic cells
lead accumulator	

	, EMF of a cel
	standard electrode potentia
	Nernst equation
	Nernst equation-- its application to chemical cell
	Relation between Gibbs energy change and EMF of a cell
	fuel cells
	corrosion.
Chemical kinetics	Rate of a reaction (average and instantaneous)
	order
	factors affecting rates of reaction: concentration, temperature, catalys
	molecularity of a reaction
	rate law
	specific rate constant
	integrated rate equations
	half life for zero order eactions
	half life for first order eactions
	concept of collision theory (elementary idea,no mathematical treatment)
	Activation energy
Arrhenius equation.	
Surface Chemistry	physisorption
	chemisorption
	factors affecting adsorption of gases on solid
	homogenous catalysis
	heterogeneous catalysis
	activity and selectivity
	colloidal state: the distinction between true solutions, colloids, and suspensions; lyophilic, multimolecular and macromolecular colloids;
	enzyme catalysis
	properties of colloid
	Tyndall effect
	Brownian movement
	electrophoresis,
	coagulation
	emulsions
types of emulsions	
General Principles and Processes of Isolation of Elements	Principles and methods of extraction
	concentration, oxidation, reduction electrolytic method, and refining
	occurrence and principles of extraction of aluminum
	copper,
	zinc
iron.	

**p-block
elements**

Group 15 elements:

General introduction,
electronic configuration
occurrence
oxidation states
trends in physical and chemical properties
nitrogen – preparation,
nitrogen-, properties
nitrogen-uses
compounds of nitrogen
preparation and properties of ammonia
: preparation and properties of nitric acid
, oxides of nitrogen (structure only);
Phosphorous-allotropic forms
compounds of phosphorous:
preparation and properties of phosphine ,halides (PCl₃, PCl₅) and oxoacids (elementary i

Group 16 elements

General introduction
electronic configuration
oxidation states
occurrence
trends in physical and chemical properties
; dioxygen
preparation, properties
uses
classification of oxides; ozone
Sulphur – allotropic forms
compounds of sulphur
preparation, properties of sulphur dioxide
uses of sulphur dioxide
sulphuric acid: industrial process of manufacture

sulphuric acid: properties and uses
, oxoacids of sulphur (structures only)

Group 17 elements

General introduction
electronic configuration
oxidation state
occurrence
trends in physical and chemical propertie
compounds of halogens: preparation
, properties and uses of chlorine
properties and uses of hydrochloric acid

	interhalogen compound
	oxoacids of halogens(structures only).
	Group 18 elements
	General introduction
	electronic configuration
	occurrence, , trends in physical and chemical properties
	uses
d and f Block Elements	General introduction
	electronic configuration
	occurrence
	characteristics of transition metals
	general trends in properties of the first-row transition metals
	metallic characte
	ionization enthalpy,
	oxidation state
	ionic radii
	i, colour
	catalytic property
	magnetic properties
	interstitial compounds
	, alloy formation
	Preparation and properties of $K_2Cr_2O_7$
	Preparation and properties of $KMnO_4$.
	Lanthanoid
	electronic configuration
	oxidation states
	, chemical reactivity
	lanthanoid contraction and its consequences
	Actinoids
	Electronic configuration
, oxidation states,	
comparison with lanthanoids	
Coordination compounds	Introduction
	, ligands,
	coordination number
	colour
	magnetic properties
	shapes
	IUPAC nomenclature of mononuclear coordination compounds
	bonding
	Werner's theory
	VBT,

	CFT
	structural isomerism
	stereo isomerism
	importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).
Haloalkanes and Haloarenes	Haloalkanes
	Nomenclature
	nature of C-X bond
	physical and chemical properties
	, mechanism of substitution reactions
	Optical rotation
	Haloarenes
	: Nature of C-X bond
	substitution reactions (directive influence of halogen for monosubstituted compounds only)
	Uses and environmental effects of -dichloromethane
	Uses and environmental effects of -, trichloromethane
	Uses and environmental effects of -tetrachloromethane
	Uses and environmental effects of -, iodoform
	Uses and environmental effects of -freons
Uses and environmental effects of -DDT	
Alcohols, Phenols, and Ethers	Alcohols
	Nomenclature,
	methods of preparation
	physical and chemical properties (of primary alcohols only)
	identification of primary, secondary, and tertiary alcohols
	mechanism of dehydration
	, uses, with special reference to methanol and ethanol.
	Phenols
	Nomenclature
	methods of preparation
	physical and chemical properties
	acidic nature of phenol
	electrophilic substitution reactions
	uses of phenols.
	Ethers
	Nomenclature
	methods of preparation,
, physical and chemical properties	
uses	
aldehyde, ketone and carboxylic acids	Aldehydes and Ketones
	Nomenclature,
	nature of carbonyl group
	methods of preparation

	physical and chemical properties
	, mechanism of nucleophilic addition
	the reactivity of alpha hydrogen in aldehydes
	uses.
	Carboxylic Acid
	Nomenclature
	acidic nature
	, methods of preparation
	physical and chemical properties
	; uses.
Organic Compounds Containing Nitrogen	Amines
	Nomenclature
	classification
	structure
	methods of preparation
	physical and chemical properties,
	uses
	, identification of primary secondary, and tertiary amines.
	Cyanides and Isocyanides– will be mentioned at relevant places in context.
	Diazonium salts:
	Preparation
	chemical reactions, importance in synthetic organic chemistry.
biomolecules	Carbohydrates –
	Classification (aldoses and ketoses)
	monosaccharide (glucose and fructose)
	D-L configuration,
	oligosaccharides (sucrose, lactose, maltose)
	polysaccharides (starch, cellulose, glycogen)
	importance
	Proteins
	Elementary idea of a-amino acids
	peptide bond,
	polypeptides,
	proteins
	primary structure, secondary structure, tertiary structure and quaternary structure (qualitative)
	denaturation of proteins
	enzymes.
	Hormones –Elementary idea (excluding structure).
	Vitamins
	Classification and functions
Nucleic Acids: DNA	
RNA	

polymers	Classification – Natural and synthetic,
	methods of polymerization (addition and condensation)
	copolymerization
	Some important polymers: natural
	Some important polymers: synthetic
	polythene,
	nylon
	polyesters,
	bakelite,
rubber	
Chemistry in Everyday Life	Biodegradable and non-biodegradable polymers.
	analgesics
	tranquilizers,
	, antiseptics
	, disinfectants
	, antimicrobials,
	antifertility drugs,
	, antibiotics
	, antacids,
	, antihistamines.
	preservatives
	artificial sweetening agents,
	elementary idea of antioxidants.
	soaps and detergents
cleansing action	