

COURSE STRUCTURE 2008-2009
SUBJECT - CHEMISTRY
SESSION : 2009-2010
CLASS : XII

**One
Paper**

Time : 3 Hours

**70
Mark**

Unit No.	Title	Marks
Unit I	Solid State	4
Unit II	Solution	5
Unit III	Electrochemistry	5
Unit IV	Chemical Kinetics	5
Unit V	Surface Chemistry	4
Unit VI	General Principles and Process of Isolation of Elements	3
Unit VI	p-Block Elements	8
Unit VII	d-and f-Block Elements	5
Unit IX	Coordination Compounds	3
Unit X	Haloalkanes and Haloarenes	4
Unit XI	Alcohols, Phenols and Ethers	4
Unit XII	Aldehydes, Ketones and Carboxylic acids	6
Unit XIII	Organic Compounds containing B \Nitrogen	4
Unit XIV	Biomolecules	4
Unit XV	Polymers	3
Unit XVI	Chemistry in Everyday life	3
	Total	70

WEEK WISE SYLLABUS
Session 2009-2010
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Class : XII

S.No.	Date	No. of Working days	Unit	Topics - Sub Topics
1	April 1-4	03	Unit - I	<u>SOLID STATE</u> Classification of solid based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices.
2	April 6-11	03	Unit I	<u>SOLID STATE</u> Calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties NCERT QUESTIONS
3	April 13-18	06	Unit II	<u>SOLUTION</u> Type of solution, expression of concentration of solution of solid in liquids, solubility of gases in liquids, solid solution. Colligative properties-relative lowering of vapour pressure, elevation of B.P., depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties
4	April 20-25	02	Unit II	<u>SOLUTION</u> Abnormal molecular mass NCERT QUESTIONS OF UNIT II
		4	Unit III	<u>ELECTRO CHEMISTRY</u> Redox reaction, conductance in electrolytic solution, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea)
5	April 27-30	03	Unit III	<u>ELECTRO CHEMISTRY</u> Dry cell-electrolytic cells and galvanic cells: ;lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application

				to chemical cells, fuel cells, corrosion
Ist May - 30-Jun		SUMMER VACATION		

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6	July 1-4	02	Unit I,II,III	Revision / Unit Tests
		02	Unit IV	<u>CHEMICAL KINETICS</u> Rate of a reaction (average and instantaneous), factors affecting rates of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant
7	July 6-11	05	Unit IV	<u>CHEMICAL KINETICS</u> Integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment)
8	July 13-18	06	Unit V	<u>SURFACE CHEMISTRY</u> Adsorption-physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis: homogenous and heterogeneous, activity and selectivity; enzyme catalysis; colloidal state: distinction between true solutions, colloids and suspensions; lyophilic, lyophobic, multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsion-types of emulsions.
9	July 20-25	05	Unit VI	<u>GENERAL PRINCIPALS AND PROCESS OF EXTRACTION OF ELEMENTS</u> Principles and methods of extraction-concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.
		01	Unit VII	<u>SOME p-BLOCK ELEMENTS</u>

				Group 15 elements : General introduction, electronic configuration, occurrence, oxidation states.
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S.No.	Date	No. of Working days	Unit	Topics - Sub Topics
10	July 27- Aug. 1	05	Unit VII	<p><u>SOME p-BLOCK ELEMENTS</u> Group 15:Trends in physical and chemical properties;nitrogen-preparation, properties and uses;compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous-allotropic forms; compounds of phosphorous: preparation and properties of phosphine, halides (PCL₃,PCL₅) and oxoacids (elementary idea only). Group 16 : General introduction, electronic configuration, oxidation states, occurrence,trends in physical and chemical properties;dioxygen:preparation properties and uses ; simple oxides ; Ozone, sulphur - allotropic forms ; compounds of sulphur: preparation, properties and uses of sulphur dioxide sulphuric ac id: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).</p>
11	Aug 3-8	05	Unit VII	<p><u>SOME p-BLOCK ELEMENTS</u> Group 17 Elements : General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only). Group 18 elements : General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses.</p>

12	Aug 10-15	01		Revision of Unit VII / NCERT Questions
		3	Unit VIII	<u>d-AND f-BLOCK ELEMENTS</u> General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals-metallic character, ionization enthalpy, oxidation states, ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation

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S.No.	Date	No. of Working days	Unit	Topics - Sub Topics
13	Aug. 17-22	06	Unit VIII	<u>d-AND f-BLOCK ELEMENTS</u> Preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$ Lanthanoids -electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction. Actinoids - Electronic configuration, oxidation states. Revision of Unit VIII / NCERT Questions
14	Aug 24-29	05	Unit IX	<u>COORDINATION COMPOUNDS</u> Coordination compounds - introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding;
15	Aug 31-Sept. 3	03		Isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems). NCERT Questions Unit IX
16	Sept '04			FIRST CCEP EXAM
17	Sept. 7-9	03	Unit 1-IX	REVISION
18	Sept. 10-18			FIRST TERM EXAMS

19	Sept. 19-28			AUTUMN BREAK AND DUSSEHRA
20	Sept. 29 Oct. 03	02 1	Unit X	DISCUSSION OF FIRST TERMS PAPERS AND RESULTS Haloalkanes and Haloarenes Haloalkanes : Nomenclature,
21	Oct 5-10	05	Unit X	Haloalkanes and Haloarenes Nature of C-X bond, physical and chemical properties, mechanism of substitution reactions. Haloarenes : nature of C-X bond, substitution reactions (directive influence of halogen for monosubstituted compounds only) Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT NCERT Questions Unit X

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S.No.	Date	No. of Working days	Unit	Topics - Sub Topics
22	Oct 12-17	05	Unit XI	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 of 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
23	Oct 19-24	02 04	Unit XI Unit XII	NCERT QUESTIONS OF Unit XI Aldehydes, Ketones and Carboxylic Acids Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods

				of preparation, physical and chemical properties mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.
24	Oct 26-28	03	Unit XII	Carboxylic Acids : Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses. NCERT QUESTIONS OF Unit XII
25	Oct. 29 Nov. '03	05	Unit XIII	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
26	Non 4-7	02	Unit XIII	Organic compounds containing Nitrogen Diazonium salts : Preparation, chemical reactions and importance in synthetic organic chemistry. NCERT Questions Unit XIII

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S.No.	Date	No. of Working days	Unit	Topics - Sub Topics
26	Nov 4-7	+2	Unit XIV	Biomolecules Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance
27	Nov 9-14	05	Unit XIV	Biomolecules Proteins - Elementary ideas of -amino acids, peptide bond, polypeptides, proteins, primary structure, secondary structure, tertiary structure and quaternary structure (qualitative idea only), denaturation of proteins; enzymes Vitamins - Classification and functions Nucleic Acids : DNA & RNA.

28	Nov. 16-21	06	Unit XV	<p>Polymers Classification-natural and synthetic, methods of polymerization (addition and condensation), copolymerization. Some important polymers: natural and synthetic like polythene, nylon, polyesters, bakelite, rubber</p>
29	Nov 23-30	04	Unit XVI	<p>Chemistry in Everyday Life 1. Chemicals in medicines - Analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines. 2. Chemicals in food - preservatives, artificial sweetening agents. 3. Cleaning agents - soaps and detergents, cleansing action.</p>

S.No.	Date	No. of working days	Unit	Subtopics
30	Dec. 1 - 5	5		REVISION
31	Dec. 7 - 10	4		REVISION
32	Dec. 11			SECOND CCEP EXAM
33	Dec. 12 - 14	2		REVISION
34	Dec. 15 - 22			SECOND TERM EXAMS
35	Dec. 23 - 24	1		DISCUSSION OF QUESTION PAPERS
36	Dec. 25			WINTER BREAL
37	Jan. 1 - 2	1		DISCUSSION OF RESULTS AND HOLIDAY HOM WORK
38	Jan 4 - 9	5		REVISION OF QUESTION BANK

39	Jan. 11 - 14	4		REVISION OF SAMPLE PAPERS
40	Jan. 15 - 23			PRE BOARD EXAMS
41	Jan. 25 - 30	4		DISCUSSION OF QUESTION PAPERS AND REVISION OF PRACTICALS
42	Feb. 1 - 6	6		REVISION OF PRACTICALS AND PRACTICAL EXAMS
43	Feb. 8 - 13	5		REVISION OF QUESTION BANK AND SAMPLE PAPERS
44	Feb. 15 - 20	6		REVISION OF QUESTION BANK AND SAMPLE PAPERS

Month Wise Syllabus for Practicals
Subject-chemistry
Class - XIII
Session 2009 - 2010

Month	Content based experiment	Salt Analysis	Volumetric Analysis
April	2	2	1
July	2	2	1
August	2	2	2
September	1	0	0
October	1	1	1
November	2	2	2
December	Revision and Pre-Board Practical Exams		
Total	10	9	7

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