CBSE Class 12 Chemistry Updated Syllabus

CBSE Class 12 Chemistry Syllabus: Course Structure

S.No	Unit Name	No. of Periods	Marks
I	Solutions	10	7
II	Electrochemistry	12	9
III	Chemical Kinetics	10	7
IV	d -and f -Block Elements	12	7
V	Coordination Compounds	12	7
VI	Haloalkanes and Haloarenes	10	6
VII	Alcohols, Phenols and Ethers	10	6

VIII	Aldehydes, Ketones and Carboxylic Acids	10	8
IX	Amines	10	6
X	Biomolecules	12	7
	Total	**108**	**70**

Overview of Class 12 Chemistry Syllabus PDF

Explore the Chemistry Class 12 Syllabus on Vedantu for comprehensive student reference. This syllabus will help students in planning their studies effectively. Chemistry Syllabus Class 12 helps students prioritise their time accordingly for thorough preparation and revision.

Chemistry Class 12 Syllabus		
Unit	Topics	Subtopics
Unit II	Solutions	Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.

Unit III	Electrochemistry	Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.
Unit IV	Chemical Kinetics	Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.
Unit VIII	d and f Block Elements	• 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, preparation and properties of K2Cr2O7 and KMnO4. • **Lanthanoids -** Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. • **Actinoids -** Electronic configuration, oxidation states and comparison with lanthanoids.
Unit IX	Coordination Compounds	Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination

		compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).
Unit X	Haloalkanes and Haloarenes	• **Haloalkanes:** Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions. • **Haloarenes:** Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). • Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.
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, and 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.
Unit XII	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. • **Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.
Unit XIII	Amines	• **Amines:** Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, and identification of primary, secondary and tertiary amines. • **Diazonium salts:** Preparation, chemical reactions and importance in synthetic organic chemistry.
Unit XIV	Biomolecules	• **Carbohydrates -** Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. • **Proteins** -Elementary idea of - amino acids, peptide bonds, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. • **Vitamins -** Classification and functions. • **Nucleic Acids:** DNA and RNA.

Class 12 Chemistry Syllabus: Practical Syllabus

Evaluation Scheme for Chemistry Practical Examination

Class 12 Chemistry Practical Evaluation Scheme provides the distribution of marks for practical work, projects, class records, and viva. Out of the total 100 marks, 30 marks are allocated for the practical exam.

Evaluation Scheme for Examination	Marks
Volumetric Analysis	8
Salt Analysis	8
Content-Based Experiment	6
Project Work and Viva	4
Class record and Viva	4
Total	**30**

Class 12 Chemistry Practical Syllabus

S.No.	Topics	Subtopics

A.	Surface Chemistry	(a) Preparation of one lyophilic and one lyophobic sol Lyophilic sol - starch, egg albumin and gum Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide. (b) Dialysis of sol-prepared in (a) above. (c) Study of the role of emulsifying agents in stabilizing the emulsion of different oils.
B.	Chemical Kinetics	(a) Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid. (b) Study of reaction rates of any one of the following: (i) Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions. (ii) Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphite: (Na_2SO_3) using starch solution as indicator (clock reaction).
C.	Thermochemistry	Any one of the following experiments i) Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.

		ii) Enthalpy of neutralization of strong acid (HCI) and strong base (NaOH). iii) Determination of enthaply change during interaction (Hydrogen bond formation) between Acetone and Chloroform.
D.	Electrochemistry	Variation of cell potential in Zn/Zn^{2+}|| Cu^{2+}/Cu with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.
E.	Chromatography	i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values. ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large differences in Rf values to be provided).
F.	Preparation of Inorganic Compounds	Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum. Preparation of Potassium Ferric Oxalate.
G.	Preparation of Organic Compounds	Preparation of any one of the following compounds i) Acetanilide ii) Di -benzalAcetone

		iii) p-Nitroacetanilide iv) Aniline yellow or 2 - Naphthol Aniline dye.
H.	Tests for the functional groups present in organic compounds	Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.
I.	Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given foodstuffs.	
J.	Determination of concentration/ molarity of KMnO4 solution by titrating it against a standard solution of:	i) Oxalic acid, ii) Ferrous Ammonium Sulphate (Students will be required to prepare standard solutions by weighing themselves).
K.	Qualitative analysis	Determination of one cation and one anion in a given salt. **Cation :** Pb^{2+}, Cu^{2+} As^{3+}, $A\ell^{3+}$, Fe^{3+}, Mn^{2+}, Zn^{2+}, Cu^{2+}, Ni^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, NH^{4+} **Anions:** $(CO_3)^{2-}$, S^{2-} , $(SO_3)^{2-}$, $(NO_2)^{-}$, $(SO_4)^{2-}$, Cl^{-} , Br^{-} , I^{-} , PO_4^{3-}, $(C_2O_4)^{2-}$, CH_3COO^{-} ,NO_3^{-}

Chemistry (Code No. 043) Question Paper Design Class - XII

S.No.	Domains	Total Marks	Percentage
1.	**Remembering and Understanding:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas.	28	40
2.	**Applying:** Solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different way.	21	30
3.	**Analysing, Evaluating and Creating:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	21	30

Prescribed Books:

1. Chemistry Part -I, Class-XII, Published by NCERT.

2. Chemistry Part -II, Class-XII, Published by NCERT