AP Board Class 11 Chemistry Syllabus 2023 – Free PDF Download

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The Andhra Pradesh Board of Intermediate Education (BIEAP) conducts the Year 12 Board Exam in March of each year. The Andhra Pradesh Council or AP Council has been hosting midterm exams since 1978. Previously, there was only one exam per year at the end of the second 12 months. This has since been changed to the current exam schedule for every 11th and 12th grade. And the most awaited moment ends here they have uploaded the AP Inter 1and 2 syllabus. We have provided the syllabus of AP Inter 1and 2 syllabus subject-wise in the pdf form students can download it easily.

Also read - Andhra Pradesh Board Class 11 Syllabus 2023

AP Class 12 exams will be available in March and AP Inter Admit Cards may be available in February. We help students in comprehending the syllabus, which is one of the most important things to do before taking an exam. The materials provided here will help students grasp the BIEAP Chemistry course. Additionally, students will learn about each unit's overview, question format, and importance. These are the most recent Class 11 curricula that state boards of education might find relevant.

Also read,

- AP Intermediate Exam 2023
- AP Inter 1st Year Result 2023
- AP Intermediate time table 2023

Chapters in Chemistry syllabus 2023 class 11 Andhra Pradesh board

The following chapters are present in the AP board book for class 11 Chemistry. The chapter names of AP Intermediate first year Chemistry syllabus are similar to NCERT syllabus. Candidates can go through the syllabus mentioned below.

S. No.	Title	

1.	ATOMIC STRUCTURE	Sub- atomic particles Atomic models- Rutherford's Nuclear model of atom Developments to the Bohr's model of atom Nature of electromagnetic radiation. Particle nature of electromagnetic radiation- Planck's quantum theory. Bohr's model for Hydrogen atom. Explanation of line spectrum of hydrogen. Limitations of Bohr's model Quantum mechanical considerations of sub atomic particles. Dual behaviour of matter. Heisenberg's uncertainty principle. Quantum mechanical model of an atom. Important features Quantum mechanical model of atom. Orbitals and quantum numbers. Shapes of atomic orbitals. Energies of orbitals. Filling of orbitals in atoms. Aufbau Principle, Pauli's exclusion Principle and Hund's rule of maximum multiplicity. Electronic configurations of atoms. Stability of half filled and completely filled orbitals
2.	CLASSIFICATION OF ELEMENTSAND PERIODICITY IN PROPERTIES	Need to classify elements Genesis of periodic classification. Modern periodic law and present form of the periodic table. Nomenclature of elements with atomic number greater than100 Electronic configuration of elements and the periodic table Electronic configuration and types of Elements s,p,d.and f blocks. Trends in physical properties: (a) Atomic radius (b) Ionic radius (c)Variation of size in inner transition elements. (d)Ionization enthalpy. (e) Electron gain enthalpy (f) Electro negativity. Periodic trends in chemical properties: (a) Valence or Oxidation states. (b) Anomalous properties of second period elements – diagonal relationship. Periodic trends and chemical reactivity

3.	CHEMICAL BONDING AND MOLECULAR STRUCTURE	Kossel – Lewis approach to chemical bonding. Ionic or electrovalent bond - Factors favourable for the formation of ionic compounds-Crystal structure of sodium chloride-General properties of ionic compounds. Bond Parameters – bond length, bond angle, and bond enthalpy, bond order, resonance-Polarity of bonds dipole moment Valence Shell Electron Pair Repulsion (VSEPR) theories. Predicting the geometry of simple molecules. Valence bond theory-Orbital overlap concept-Directional properties of bonds-overlapping of atomic orbitals strength of sigma and pi bonds-Factors favouring the formation of covalent bonds Hybridisation- different types of hybridization involving s, p and d orbitals- shapes of simple covalent molecules. Coordinate bond – definition with examples. Molecular orbital theory – Formation of molecular orbitals, Linear combination of atomic orbitals (LCAO)-conditions for combination of atomic orbitals - Energy level diagrams for molecular orbitals - Bonding in some homo nuclear diatomic moleculesH3,He3,Li3,B3,C3,N3,and O3 Hydrogen bonding-cause of formation of hydrogen bond- Types of hydrogen bonds-inter and intra molecular-General properties of hydrogen bonds.
4.	STATES OF MATTER: GASES AND LIQUIDS	Intermolecular forces Thermal Energy Intermolecular forces Vs Thermal interactions. The Gaseous State. The Gas Laws Ideal gas equation. Graham's law of diffusion – Dalton's Law of partial pressures. Kinetic molecular theory of gases. Kinetic gas equation of an ideal gas (No derivation) deduction of gas laws from Kinetic gas equation. Distribution of molecular speeds – rms, average and most probable speeds-Kinetic energy of gas molecules. Behaviour of real gases – Deviation from Ideal gas behaviour – Compressibility factor Vs Pressure diagrams of real gases. Liquefaction of gases Liquid State – Properties of Liquids in terms of Inter molecular interactions – Vapour pressure, Viscosity and Surface tension (Qualitative idea only. No mathematical derivation)

5.	STOICHIOMETRY	Some Basic Concepts – Properties of matter – uncertainty in Measurement-significant figures, dimensional analysis. Laws of Chemical Combinations – Law of Conservation of Mass, Law of Definite Proportions, Law of Multiple Proportions, Gay Lussac's Law of Gaseous Volumes, Dalton's Atomic Theory, Avogadro Law, Principles, Examples. Atomic and molecular masses- mole concept and molar mass concept of equivalent weight. Percentage composition of compounds and calculations of empirical and molecular formulae of compounds. Stoichiometry and stoichiometric calculations. Methods of Expressing concentrations of solutions-mass percent, mole fraction, molarity, molality and normality. Redox reactions-classical idea of redox reactions, oxidation and reduction reactions-redox reactions in terms of electron transfer. Oxidation number concept. Types of Redox reactions-combination, decomposition, displacement. and disproportionation reactions Balancing of redox reactions – oxidation number method Half reaction (ion-electron) method. Redox reactions in Titrimetry.
6.	THERMODYNAMICS	Thermodynamic Terms. The system and the surroundings. 6.1.2. Types of systems and surroundings. The state of the system. The Internal Energy as a State Function. (a) Work (b) Heat (c) The general case, the first law of Thermodynamics. 6.2 Applications. Work Enthalpy, H- a useful new state function Extensive and intensive properties. Heat capacity The relationship between CP and Cv. Measurement of OU and O H: Calorimetry Enthalpy change, Or H of reactions – reaction Enthalpy (a) Standard enthalpy of reactions. (b) Enthalpy changes during transformations. (c) Standard enthalpy of formation. (d) Thermo chemical equations. (e) Hess's law of constant Heat summation. Enthalpies for different types of reactions. (a) Standard enthalpy of combustion (Oc HO) (b) Enthalpy of atomization (Oa Hø), phase transition, sublimation and ionization. (c) Bond Enthalpy (Obond Hø) (d) Enthalpy of solution (Osol Hø) and dilution. Spontaneity. (a) Is decrease in enthalpy a criterion for spontaneity? (b) Entropy and spontaneity, *the second law of thermodynamics. (c) Gibbs Energy and spontaneity. Gibbs Energy change and equilibrium. Absolute entropy and the third law of thermodynamics.

7.	CHEMICAL EQUILIBRIUM AND ACIDS-BASES	Equilibrium in Physical process. 15 Equilibrium in chemical process – Dynamic Equilibrium Law of chemical Equilibrium - Law of mass action and Equilibrium constant. Homogeneous Equilibria, Equilibrium constant in gaseous systems. Relationship between KP and Kc Heterogeneous Equilibria. Applications of Equilibrium constant. Relationship between Equilibrium constant K, reaction quotient Q and Gibbs energy G. Factors affecting Equilibria.-Le-chatlieprinciple application to industrial synthesis of Ammonia and Sulphur trioxide. Ionic Equilibrium in solutions. Acids, bases and salts- Arrhenius, Bronsted-Lowry and Lewis concepts of acids and bases. Ionisation of Acids and Bases –Ionisation constant of water and it's ionic product- pH scale-ionisation constants of weak acids-ionisation of weak bases-relation between Ka and Kb-Di and poly basic acids and di and poly acidic BasesFactors affecting acid strength-Common ion effect in the ionization of acids and bases-Hydrolysis of salts and pH of their solutions. Buffer solutions-designing of buffer solution-Preparation of Acidic buffer Solubility Equilibria of sparingly soluble salts. Solubility product constant Common ion effect on solubility of Ionic salts.
8.	HYDROGEN AND ITS COMPOUNDS	Position of hydrogen in the periodic table. Dihydrogen-Occurance and Isotopes. Preparation of Dihydrogen Properties of Dihydrogen Hydrides: Ionic, covalent, and non-stiochiometric hydrides. Water: Physical properties; structure of water, ice. Chemical properties of water; hard and soft water Temporary and permanent hardness of water Hydrogen peroxide: Preparation; Physical properties; structure and chemical properties; storage and uses. Heavy Water Hydrogen as a fuel

9.	THE s – BLOCK ELEMENTS (ALKALI AND ALKALINE EARTH METALS)	Group 1 Elements Alkali metals; Electronic configurations; Atomic and Ionic radii; Ionization enthalpy; Hydration enthalpy; Physical properties; Chemical properties; Uses General characteristics of the compounds of the alkali metals: Oxides; Halides; Salts of Oxy Acids. Anomalous properties of Lithium: Differences and similarities with other alkali metals. Diagonal relationship; similarities between Lithium and Magnesium. Some important compounds of Sodium: Sodium Carbonate; Sodium Chloride; Sodium Hydroxide; Sodium hydrogen carbonate. Biological importance of Sodium and Potassium. Group 2 Elements: Alkaline earth elements; Electronic configuration; Ionization enthalpy; Hydration enthalpy; Physical properties, Chemical properties; Uses. General characteristics of compounds of the Alkaline Earth Metals: Oxides, hydroxides, halides, salts of Oxyacids (Carbonates; Sulphates and Nitrates). Anomalous behavior of Beryllium; its diagonal relationship with Aluminum. Some important compounds of calcium: Preparation and uses of Calcium Oxide ; Calcium Hydroxide; Calcium Carbonate;Plaster of Paris; Cement. Biological importance of Calcium and Magnesium.
10.	P- BLOCK ELEMENTS GROUP 13 (BORON FAMILY)	General introduction – Electronic configuration, Atomic radii, Ionization enthalpy, Electro negativity; Physical & Chemical properties. Important trends and anomalous properties of boron. Some important compounds of boron – Borax, Ortho boric acid,diborane. Uses of boron, aluminium and their compounds.
11.	p-BLOCK ELEMENTS - GROUP 14 (CARBON FAMILY)	General introduction - Electronic configuration, Atomic radii, Ionization enthalpy, Electro negativity; Physical & Chemical properties. Important trends and anomalous properties of carbon. Allotropes of carbon. Uses of carbon. Some important compounds of carbon and silicon – carbonmonoxide, carbon dioxide,Silica, silicones, silicates and zeolites.

12.	ENVIRONMENTAL CHEMISTRY	Definition of terms: Air, Water and Soil Pollutions. Environmental Pollution . Atmospheric pollution; Tropospheric Pollution; Gaseous Air Pollutants (Oxides of Sulphur; Oxides of Nitrogen; Hydro Carbons; Oxides of Carbon (CO; CO2). Global warming and Green house effect. Acid Rain- Particulate Pollutants- Smog. Stratospheric Pollution: Formation and breakdown of Ozone- Ozone hole- effects of depletion of the Ozone layer. Water Pollution: Causes of Water Pollution; International standards for drinking water. Soil Pollution: Pesticides, Industrial Wastes. Strategies to control environmental pollution- waste Managementcollection and disposal. Green Chemistry: Green chemistry in day-to-day life; Dry cleaning of clothes; Bleaching of paper; Synthesis of chemicals

13.	ORGANIC CHEMISTRY-SOME BASIC PRINCIPLES AND TECHNIQUES AND HYDROCARBONS	General introduction. Tetravalency of Carbon: shapes of organic compounds. Structural representations of organic compounds. Classification of organic compounds. Nomenclature of organic compounds. Isomerism. Fundamental concepts in organic reaction mechanisms. Fission of covalent bond. Nucleophiles and electrophiles. Electron movements in organic reactions. Electron displacement effects in covalent bonds. Types of Organic reactions. Methods of purification of organic compounds. Qualitative elemental analysis of organic compounds. Quantitative elemental analysis of organic compounds. HYDROCARBONS Classification of Hydrocarbons. Alkanes – Nomenclature, isomerism (structural and conformations of ethane only) Preparation of alkanes Properties – Physical properties and chemical Reactivity, Substitution reactions – Halogenation(free radical mechanism), Combustion, Controlled Oxidation, Isomerisation, Aromatization, reaction with steam and Pyrolysis. Alkenes-Nomenclature, structure of ethane, Isomerism (structural and geometrical). Methods of preparation. Properties- Physical and chemical reactions: Addition of Hydrogen, halogen, water, sulphuric acid, Hydrogen halides (Mechanism- ionic and peroxide effect, Markovnikov's , antiMarkovnikov's or Kharasch effect). Oxidation, Ozonolysis and Polymerization. Alkynes – Nomenclature and isomerism, structure of acetylene. Methods of preparation of acetylene. Physical properties, Chemical reactions- acidic character of acetylene, addition reactions- of hydrogen, Halogen, Hydrogen halides and water. Polymerization. Aromatic Hydrocarbons: Nomenclature and isomerism.Structure of benzene, Resonance and aromaticity. Preparation of benzene. Physical properties. Chemical properties: Mechanism of electrophilic substitution. Electrophilic substitution reactionsNitration, Sulphonation, Halogenation, Friedel-Craft' alkylation and acylation. Directive influence of functional groups in mono substituted benzene, Carcinogenicity and toxicity.

Andhra Pradesh Board Class11 Others subject syllabus:

- AP STATE BOARD class 11 Physics syllabus
- AP STATE BOARD class 11 Maths syllabus
- AP STATE BOARD class 11 Zoology syllabus

- AP STATE BOARD class11 Botany syllabus

For empowerment purposes, we offer the AP Intermediate One-Year Program to help students make the most of their educational experience. Our goal is to help them reach their testing potential. We help students understand the program, one of the most important tasks they must complete before taking the exam. Students will gain in-depth knowledge of the BIEAP Chemistry course by following the curriculum outlined here. Students also learn about the outline of each section, the structure of the questions, and their importance. An up-to-date 11th grade curriculum useful for students in public boarding schools.

Some Useful Materials

The following are some useful materials for preparation of exams like NEET and JEE Main.

NCERT Syllabus	NCERT Book
NCERT Solutions	NCERT Exemplar Solutions
NCERT Revision Notes	CBSE Board

Frequently Asked Question (FAQs) - AP Board Class 11 Chemistry Syllabus 2023 – Free PDF Download

Question: How to prepare the science subject? Any preparation tip?

Answer:

Subjects that are practical and are all interlinked. Candidates should understand the concepts and remember the formulas. Practice is the key. Candidates must practice subjects like mathematics and physics to have a better understanding of the concept.

Question: What exactly is the AP Intermediate Examination?

Answer:

Andhra Pradesh Intermediate Examination (11th & 12th class) is referred to as the AP Intermediate Exam.

Question: When will the result be declared?

Answer:

The results for Andhra Pradesh Class 12th board examinations are expected to be declared in May 2023. Candidates can visit the official website of the Andhra Pradesh Board to check their results by entering their roll number and code.

Question: Will the board let students know about the exam pattern it decides?

Answer:

Yes in the coming time, whatever decision the Board will take, information will be updated on this page.
