Continue

Basic principles of organic chemistry class 11 notes pdf. Chemistry class 11 chapter 14 basic principles of organic chemistry notes. Handwritten notes of organic chemistry class 11. Basic principles of organic chemistry class 11 notes. Iupac nomenclature of organic chemistry class 11 notes. Notes of organic chemistry class 11 pdf. Some basic concepts of organic chemistry class 11 notes ppt. Short notes on organic chemistry for class 11.

Chemistry (derived from the Egyptian word kÃme (chem), meaning "earth") is the science that studies the composition, structure, and properties of matter and the changes that occur in it through chemical reactions. Chemistry is often referred to as a basic science because of its role in connecting the physical sciences (including chemistry) with the life sciences and the applied sciences (such as medicine and engineering) with both macroscopic and physical phenomena in the universe. It is usually the effect of physical properties on the chemical properties of the substance and also on the structure. 1.2. Inorganic Chemistry The branch of chemistry that studies compounds that do not contain carbon and hydrogen atoms is called "inorganic chemistry". Simply put, it is the opposite of organic chemistry. Substances that do not have carbon-hydrogen bonds are metals, salts, and chemicals. 1.3 Organic chemistry The discipline dealing with the study of the structure, composition and chemical properties of organic compounds is called organic chemistry. This includes the study of carbon and its compounds. Using knowledge and technology, biochemists can understand and solve biological problems. 1.5. Analytical Chemistry This is a branch of chemistry that uses instruments and analytical methods to determine the structure, functionality and properties of matter. 2. Matter Matter is defined as anything that has mass and also occupies a certain volume in space. In general, matter is divided into three phases: Solid - matter that has a certain shape and retains its volume according to its shape. They also have the least freedom of movement. B. sugar, iron, gold, woodChemistry (derived from the Egyptian word kÃme (chem), meaning "earth") is the science that studies the composition, structure, and properties of matter, as well as the changes it undergoes in chemical reactions. Chemistry is often referred to as a fundamental science because it plays a role in linking the physical sciences (including chemistry) to the life sciences and the applied sciences (such as medicine and engineering) to macroscopic and physical phenomena in the universe. In general, this is the influence of physical properties on the chemical properties and structure of a substance. 1.2 Inorganic chemistry The branch of chemistry that deals with the study of compounds that do not contain carbon or hydrogen atoms is called "inorganic chemistry". Simply put, it is the opposite of organic chemistry. Substances that do not have carbon-hydrogen bonds include metals, salts, and chemicals. 1.3 Organic chemistry The discipline that studies the structure, composition and chemical properties of organic compounds is called organic chemistry. It consists in the study of carbon and its compounds. By using chemical knowledge and technology, biochemists can understand and solve biological problems. Analytical Chemistry This is the branch of chemistry that uses analytical tools and methods to determine the structure, function, and properties of substances. 2. Matter Matter is defined as everything that has mass and also occupies a certain volume in space. In general, matter is divided into three phases: Solid - A substance that has a certain shape and keeps its volume in accordance with its shape. They also have the least freedom of movement. B. sugar, iron, gold, woodA substance is a substance that is usually shaped like a vessel but has a fixed volume. Liquids also tend to flow or overflow. For example. Water, milk, oil, mercury, alcohol, etc. Gas - Substances that have no definite volume or shape. Gases usually completely fill the container in which they are stored. For example. Hydrogen, Oxygen, etc. These three states are mutually transformed by changing the temperature and pressure conditions as follows: (Picture will be uploaded soon) 3. Classification of matter at the macroscopic level. Macroscopic level: (a) mixtures (b) pure substances. These substances can be further classified as follows: (Image will be uploaded shortly) (a) Mixtures: A mixture is a substance in which two or more substances are present in any ratio. There are basically two types: heterogeneous and homogeneous mixtures. Homogeneous mixture - Two substances are mixed into a mixture in such a way that a homogeneous phase is formed, i.e. the composition of the substances present is homogeneous. Thus, sugar solution and air are examples of homogeneous mixtures. Heterogeneous mixtures - two or more substances are mixed, resulting in a heterogeneous composition of the entire mixture. Some examples are suspensions, a mixture of two solids, say salt and sugar. Note. Any separate part of a substance that is homogeneous in composition and properties is called a phase. (b) Pure substances. A material that contains only one type of particle is called a pure substance. Note: In chemistry, forms of matter have constant chemical composition and chemical properties and cannot be separated into constituents by physical methods. Pure substances are divided as follows: Element. An element is defined as a pure substance that contains only one type of atom and is not subject to further decomposition. Elements are further divided into three classes based on their physical and chemical properties i.e.Metals (2) non-metals and (3) semi-metals. Compound - A compound is a pure material consisting of two or more elements mixed in a specific mass ratio. In addition, the properties of a connection are different from those of its components. In addition, the components of a compound cannot be separated into simpler substances by physical methods. They can only be separated by chemical methods. 4. Properties of Substances Each substance has unique or characteristic properties. Physical properties and chemical properties are two types of observable properties. 4.1 Physical properties Physical properties are those that can be measured or observed without affecting the identity or composition of a substance. Color, smell, melting point, boiling point, density and other physical properties are some examples. 4.2 Chemical properties Chemical properties are the properties of certain substances that can be observed in chemical reactions. Some of the key chemical properties include flammability, toxicity, heat of combustion, pH, radioactive decay rate, and chemical stability. 5. Measurement 5.1 Physical quantities Physical quantities are quantities that we encounter in our scientific research. Any physical quantity can be measured in two parts: (1) a number and (2) a unit of measurement: a unit is defined as a reference standard chosen to measure any physical quantity. 5.2 Units The International System of Units (in French Le Systeme International dâUnités, abbreviated as SI) was established by the Eleventh General Conference on Weights and Measures (CGPM for Conference Generale des Poids at Measures). The CGPM is an intergovernmental treaty organization created by a diplomatic treaty called the Convention of the Meter, signed in Paris \[1875\]. The SI system consists of the seven base units listed below, which refer to the seven basic scientific quantities. Other physical quantities such as speed, volume, density, etc.are derived from these values. The basic SI units are defined below: Unit of length Unit of mass Unit of time Electric current Unit of thermodynamics Temperature Unit of matter Unit of light intensity Meter Kilogram Second Ampere Kelvin Mole Candela Handwriting{}^{1}/ {}_ {299}}\text { }792\text { }458\] seconds. A kilogram is a unit of mass; is equal to the mass of the international prototype kilogram. The second is the duration of the \[9\text{ }192\text{ }631\text{ }770\] emission periods corresponding to the transition between the two hyperfine levels of the ground state of the cesium atom \[-133] . Â A meter of vacuum spacing between these wires develops a force equal to \[2\text{ }\times \text{ }{{10}^{7}}\] Newtons per meter of length. Kelvin, the unit of thermodynamic temperature is the temperature diffraction \[{\scriptstyle{}^{1}/{}_{273}}\]. \[16\] Thermodynamic temperature of the triple point of water.1. A mole is the amount of substance in a system that contains as many elementary particles as there are atoms in \[0.012\] kilograms of carbon\[-12\] ; its symbol is "mol".2. When a mole is used, elementary units must be specified, which may be atoms, molecules, ions, electrons, other particles, or specified groups of such particles. A candela is the intensity of light in a given direction from a source emitting monochromatic radiation of frequency \[540\times 1012\] hertz and the intensity of the radiation in that direction \[{\scriptstyle{}^{1}/ { } _{683}}\ ] watts per steradian. Note: Since 1889, the standard has been the kilogram. It was defined as the mass of a platinum-iridium (Pt-Ir) cylinder,in a sealed jar at the International Bureau of Weights and Measures in Sevres, France. Pt-Ir was chosen for this standard because it is very resistant to chemicals and its weight does not change over a very long period of time. 6. Some important definitions. 6.1 Mass and weight The mass of a substance is the amount of substance it contains, and weight is the gravitational force exerted on an object. The mass of matter is constant, and due to changes in gravity, its weight can change from place to place. The SI unit of mass is the kilogram (kg). The SI derived unit of mass (the SI derived unit of the base unit) is the newton. 6.2 Volume Volume is the volume of three-dimensional space bounded by certain closed boundaries, such as the space occupied or enclosed by a substance (solid, liquid, gas or plasma) or form. Volume is usually quantified using derived SI units (cubic metres). 6.3 Density The bulk density or density of a material is defined as its mass per unit volume. Density is denoted by $\rho $ (small Greek letter rho). The SI unit of density is \[kg\text{ }{{m}^{3}}\]. 6.4 Temperature Temperature is a physical property of matter that quantifies the general concepts of heat and cold. Three common scales are used to measure temperature: (Celsius), (Fahrenheit) and (Kelvin). The temperature on both scales is related as follows: \[{}^\circ F\text{ }=\ text{ }9/5\text{ }\left({}^\circ C \ right) \text { }+\text{ }32\]Â \[K={}^\circ C+273,15\]Â 7. Law of Compounding Chemical Compounds 7.1 Law of Conservation of Mass — In a chemical reaction, mass is the reactants consumed and the mass of the products produced are the same, i.e. the mass is conserved." This is a direct consequence of the law of conservation of atoms. This law was given by Antoine Lavoisier in [1789].the scheme is always the same. It was given by the French chemist Joseph Proust. 7.3. Law of Multiple Proportions The law of multiple proportions states that when two elements combine to form more than one compound, the mass of one element is proportional to the solid mass of the other element. an integer. This law [1803] was proposed by Dalton. 7.4. Law of Inverse Proportions The law states that if two different elements are combined with a fixed mass of the third element, then the ratio of their combined masses is equal to a multiple of their mass. combined weight. This law [1792] was proposed by Richter. 7.5. Gay-Lussac's Law of Gas Volume Gay-Lussac's law developed in 1808 states that “the ratio between the volume of a gaseous reactant and the product can be represented by a simple whole number. 7.6. Avogadro's Law V [1811] Avogadro proposed that equal quantities of gases at the same temperature and pressure must contain the same number of molecules 8. Dalton's Atomic Theory In 1808, Dalton published The New System of Chemical Philosophy, in which he proposed the following: Matter is composed of indivisible atoms. All atoms of a given element have the same properties, including the same mass. Atoms of different elements differ in mass. Compounds are formed when atoms of different elements combine in a fixed ratio. Chemical reactions involve the reorganization of atoms. They are neither created nor destroyed by a chemical reaction. 9. AtomAtom is defined as the smallest unit that retains the properties of an element and at the same time participates in a chemical reaction (Note: this definition applies only to non-radioactive reactions) 9.1 Mass per ohm There are two ways to indicate the mass of atoms 9.2. Method 1. Atomic mass can be defined as the mass of a single atom, measured in atomic mass units (a.m.u.) or mass units (u), where\[1\text{ }a.m.u.\ text{ } =\text{ }{}^{ 1}/{ }_{12}th\]mass of one \[{{C}^{12}}\] atom9.3. methodof \[6,022\text{ }\times \text{ }{{10}^{23}}\] atoms of this element in grams. This is also known as the molar atomic mass. Note. Mass of 1 atom in amu and the mass \[6,022\text{ }\times \text{ }{{10}^{23}}\] of atoms in grams are numerically equal if the atomic mass is expressed in grams also called the molar atomic mass. room . A mole is just a number. Like \[1\]Â dozen\[=\text{ }12\] ;\[1\text{ }million\text{ }=\text{ }{{10}^{6}}\text{ } ; \] \[1\text{ }mol\text{ }=\text{ }6.022\text{ }\times \text{ }{{10}^{23}}\] 10. Molecules all physical and chemical properties of matter. A molecule is made up of one or more atoms. for example, \[{{H}_{2}}.\text{ }N{{H}_{3}}\]. The mass of a molecule is measured by adding the masses of its constituent atoms. Therefore, the mass of a molecule can also be expressed by the two methods used to measure the mass of an atom, namely a.m.u. and g/mol. (Image to be uploaded shortly) 11. Chemical Reactions A process of changing the molecular or ionic structure of a substance, other than a change in physical form or a nuclear reaction. Tips to remember: Equations must be balanced before proceeding with calculations. We don't need to conserve the number of molecules in the reaction. For example, \[{{N}_{2}}+3\text{ }{{H}_{{2}_{~}}}}\to 2N{{H}_{3}}\]. If we consider only the rearrangement of atoms in a chemical equilibrium reaction and the number of molecules is not conserved, then it is clear that the mass of atoms on the reaction side is equal to the sum of the masses of atoms on the reaction side. This is the law of conservation of atoms and the law of conservation of mass. 12. Stoichiometry The study of chemical reactions and related calculations is called stoichiometry. The ratio used to balance the reaction is called stoichiometric.As a reminder, the stoichiometric coefficient is the molar ratio of the reacting atomic molecules, not the mass. The actual amount of product created is always less than the amount predicted by the theoretical calculation. 12.1 The limiting reagent (LR) and excess reagent (ER) determine how much product is produced, called the limiting reagent, and the excess reagent is called the excess reagent. For example, if we burn carbon in the air (it has an unlimited supply of oxygen), the amount of CO2 produced depends on the amount of carbon we breathe. In this case, carbon is the limiting agent and \[{{O}_{2}}\] is the excess agent. 13. Output percentage. As mentioned above, for practical reasons, the amount of product formed by the chemical reaction is less than the amount predicted by the theoretical calculation. Multiplied by 100, the ratio between the amount of product formed and the amount predicted gives the percent yield. \]Â 14. Reactions in an aqueous environment Two solid substances cannot react together in the solid phase, so they must dissolve in a liquid. When solutes are dissolved in a solvent, they coexist in a single phase called a solution. Several parameters are used to measure mortar strength. The strength of a solution characterizes the amount of solute contained in the solution. Parameters used to indicate the strength of a solution: Mole fraction \[X\]: number of moles of component / total number of moles of solution. Mass\ [\%\]Â : Mass of solute (in g) in \[100 g \]Â solution.\ [{}^{Mass}/{}_{Vol}\] : Mass of solute (in d) present in \ [100 ml\]Â: volume of solute/volume of solution {only for Liq-Liq solutions}\[{}^{g}/{}_{L}\] : Mass. solutes (g) in \[1L\]Â ppm solution: \[\dfrac{\text{mass of solute}}{\text{mass of solution}}\times 10\]Â molarity (M) : \ [\dfrac{\text{mole of solute}}{\text{volume of solution}\left(\text{L} \right)}\]ÂÂ Â Molality (m):\[\dfrac{ \text{ moles of dissolved substance}}{\text{mass of solvent}\left(\text{kg} \right)}\] Important relationships1. Relationship between molarity (\[m\]), molarity (\[M\]), density (\[d\]) of the solution and molar mass of the dissolved substance (\[{{M}_{O}}\ ]) Â \ [d\] : density in g/ml\[{{M}_{O}}\]: molar mass in \[g\text{ }mo{{l}^{1}}\] molality, \ [m=\dfrac{M\times 1000}{1000d-M{{M}_{O}}}\]Â 2. Relationship between molarity (\[m\]) and molar diffraction (\ [{{X } _ {B}}\]) Solutions $m=\dfrac{{{X}_{B}}}{1-{{X}_{B}}}\times \dfrac{1000} {{ {M } _ {X}}}$$m=\dfrac{1-{{X}_{A}}}{{{X}_{A}}}\times \dfrac{1000}{ {{ M}_ { A }}}$Note: Molarity is the most common measure of the strength of a solution. The product of the molarity and the volume of the solution gives the number of moles of solute, \[n=M\ times V\] All power formulas contain the amount of solute. (weight or moles) in the numerator. All formulas have the solution set in the denominator, except molality (\[m\]). 15. Dilution Law The moles of a solution do not change when diluted. Diluting the volume of the molar solution \[{{M}_{1}}\] from \[{{V}_{1}}\] to \[{{V}_{2}}\ ] by adding more solvent we can write:\[{{M}_{1}}{{V}_{1}}=\] moles of solute in solution \[={{M}_{2} } {{V} _{2}}\]Â 16. Influence of temperature The solvent volume increases with increasing temperature. Assuming that the system is closed, this means that there is no loss of mass and the quality of the solute in the solution is not affected. Strength formulas for solutions that do not include the volume of the solution are not subject to temperature changes, e.g. B. Molality remains unchanged with temperature. formulasThe volume changes with temperature, i.e. B. Molarity. 17. Introduction to the concept of equivalence The concept of equivalence is a way of understanding chemical reactions and processes, and the concept of equivalence is usually used for convenience. 17.1 Equivalent mass. The mass of an acid that yields \[1\] mol \[H+\] is called its equivalent mass. ââ The mass of the base that gives \[1\] mol \[OH-\] is called its â17.2 Valence factor (n-factor (denoted by Z)) Valence factor: this is the number of \[H+\] ions supplied by one molecule \[1\] or one mole of acid, or the number of \[OH-\] ions supplied by \[1\] or \[1\] moles of basic mass equivalent, $E = \dfrac{\text{molecular weight} }{\text{Z}}$ Â 17.3 has no equivalent. equivalents \[=\dfrac{\text{ }\dfrac{\text{wt}\text{. Acids}}{\text{ suggested base}}\text{ }}{\text{Eq}\text{. wt}}.\]Note: Always remember that the \[1\] equivalent of an acid reacts with the \[1\] equivalent of a base. 18. A mixture of acids and bases. When we have a mixture of several acids and bases, we can use the concept of equivalence to determine whether the resulting solution is acidic or basic. For a mixture of several acids and bases, find the equivalents of the acids and bases used and determine which ones are in excess. 19. Law of chemical equivalence According to this law, one equivalent of one reactant combines with one equivalent of another reactant to form one equivalent of each product. For example, in the reaction \[aA+bB~\to cC+dD\], regardless of the stoichiometric coefficients \[1\] of the equation. from \[A\] reacts with the \[1\] equation. from \[B\], so \[1\] is an equation. \[C\] and \[1\]eq \[D\]Â 20 respectively. Equivalent mass of salts To calculate the equivalent mass of a compound that is neither an acid nor a base, we need to know the charge of the cations or anions. The mass of a cation divided by the charge on it is called the equivalent mass of the cation, and the mass of the anion divided by the charge on it is called the equivalent mass.mass of anions. By adding equal masses of anions and cations, we get equal amounts of salts. For a salt, the valence factor is the total number of positive or negative charges provided by 1 mole of salt. 21. Origin of the concept of equivalent. Originally, the equivalent mass of an element was defined as the mass of the element plus 1 gram of hydrogen. The definition was then changed to: The equivalent weight of an element is equal to the weight of the element plus 8 grams of oxygen. Note. The same cell can have several equivalent weights depending on its charge. For example. \[F{{e}^{2+}}\] and \[F{{e}^{3+}}\]Â 22. Equivalent volume of gases The equivalent volume of a gas is the volume occupied by \ [1\ ] equivalent gas under standard conditions Equivalent gas mass\[={}^{molecular\text{ }mass}/{}_{Z}\] Since \[1\] mole of gas occupies \[22.4 L \ ]Â at STP , so the gas equivalent of \[1\] in STP will take \[{}^{22.4}/{}_{Z}\text{ }L\]. For example. Oxygen occupies \[5.6 l\], chlorine and hydrogen \[11.2 l\]. 23. Normality The normality of a solution is the number of solute equivalents present in \[1\]L of the solution. \text{ } }{\text{volume of solution}\left(\text{L} \right)}\]The number of solute equivalents in a solution is given by \[\text{normality}\ !\ !\times \! \! \text{Volume }\left(\text{L} \right)\text{.}\]Â Â When diluting a solution, the number of solute equivalents is conserved, so we can use the formula: \ [{{N}_{1 } }{ {V}_{1}}={{N}_{2}} {{V}_{2}}\]Â Warning: Please note that the above equation can be confusing and is a common mistake students make . This is the dilution equation to keep the number equivalent. Now, since one equivalent of a reagent always reacts with one equivalent of another reagent, similar equations are used in acid-base titrations. Don't apply the same logic to molarity. AttitudeNormality and molarity are determined:\[N=M\times Z\] ; where â\[Z\]â is the valency factor CBSE Class 11 Chemistry Notes Chapter 1 - Basic Chemistry Concepts Some Basic Chemistry Concepts Class 11 Chapter 1: Some Basic Chemistry Concepts This chapter is very important to understand and develop in chemistry. Chemistry Grade 11 Chapter 1 Notes comprehensively explains some important topics and concepts in plain language for students' better understanding. These topics are: Physical Chemistry Inorganic Chemistry Organic Chemistry Biochemistry Analytical Chemistry Miscellaneous Substances Classification of substance properties. Huge, unwieldy weight. Parameterization of the law of many proportions and directives. The concept of chemical equivalence This is the basis of chemistry and it should be noted that many of the important questions Objective - Easy Assessments that form the basis of this unit appear every year in the Chemistry Examination for Grade 11. Notes for Chemistry Chapter 1 for Grade 11 cover all of these basic questions with solved tasks. So, these notes are very important before taking the exam because they meet your basic need to study diligently and intelligently to make your efforts more efficient and quality-oriented. Important Questions What does Avogadro's Law say? There are two metal oxides. containing 27.6% and 30% oxygen. Find the formula of the second metal oxide if the formula of the first metal oxide is given as M3O4. What is the definition of weight. Also enter its SI unit. How do physical properties differ from chemical properties? What is the advantage of using molality over molarity? Some Basic Chemistry Concepts Grade 11 Notebooks Free Download PDF. Grade 11 Chemistry Unit 1 focuses on providing basic chemistry concepts. explain in elementary terms what is clear andto understand. Student understanding is also enhanced as the Year 11 Chemistry Unit 1 notes are detailed and presented in a simplified format that promotes better learning. If you keep these notes in mind, you don't need to look for other resources to pass the exam. Year 11 Chemistry Notes Chapter 1 has been prepared after revising the previous years question papers to provide students with the key questions that may arise in the Year 11 Chemistry exam. Advantages of Chemistry Notes for Class 11 Chapter 1 These key concepts of Chemistry Notes for Class 11 Chapter 1 are taken from the updated CBSE syllabus with the latest exam pattern to keep students on track. Students can download and use this Class 11 Chemistry Chapter 1 Notes to get good marks in their exams. Chemistry Unit 1 Year 11 Notes are the foundation of Chemistry and will help students pass all types of exams. These Year 1 Chemistry Unit 11 Notes will build the foundations of Chemistry for students interested in a career in Chemistry. Chemistry Chapter 1 Year 11 Notes introduces the basic concepts of chemistry and is an important chapter for a student to complete before the exam. Conclusion Grade 11 Chemistry Chapter 1 is useful for students as it is written in clear and easy to understand language. Chemistry Grade 11 Chapter 1 Annotation in PDF format will help students to know what topics to study in Chemistry Basics. Advice for students is to study these notes carefully and focus on learning, not stealing.