

## Class 9 CBSE Test paper Solved Chapter 3 : Atoms and Molecules

1.	Define atomic mass and molecular mass.
Ans:	Atomic mass of an atom of a chemical element is approximately equivalent to the number of protons and neutrons in the atom. The molecular mass of a substance is the sum of the atomic masses of all the atoms in a molecule of the substance.
2.	Who provided the basic theory about the nature of matter?
Ans:	John Dalton
3.	Define atomic mass unit
Ans:	Atomic mass unit of an element is one twelfth (1/12th) of the mass of one atom of carbon-12.
4.	The number of atoms consisting a molecule is known as its _____
Ans:	Atomicity.
5.	What is valency of an element?
Ans:	No of electrons gained or lost by an atom of element to form a compound is called valency of an element. Eg. In $H_2S$ $\rightarrow$ Valency of Hydrogen is 1 and that of sulphur is 2
6.	Mass of 1 mole of substance is called its _____
Ans:	molar mass
7.	Avogadro number is _____
Ans:	$6.022 \times 10^{23}$
8.	A group of atoms carrying a charge is known as a _____
Ans:	A group of atoms carrying a charge is known as a polyatomic ion. Example: Sulphate ion, $SO_4^{2-}$ , $NH_4^{+1}$
9.	The reciprocal of _____ is called AVOGRAM.
Ans:	Avogadro number
10.	The most abundant metal in earth's crust is _____
Ans:	Aluminum (8.23%)
11.	Which postulate of Dalton's atomic theory can explain the law of definite proportion?
Ans:	6 <sup>th</sup> postulates: The relative number and kinds of atoms are constant in a given compound. For example, a sample of water from pond, lake, well or rain contains

	hydrogen and oxygen in the ratio of 1:8 by mass.
12.	Write the formula of ammonium carbonate.
Ans:	$(\text{NH}_4)_2\text{CO}_3$
13.	Define an element.
Ans:	Elements are the purest form of matter eg. gold.
14.	How many atoms are present in $\text{H}_2\text{S}$ molecule and $\text{PO}_4^{3-}$ ion?
Ans:	(i) 3 atoms because $\text{H}_2\text{S}$ molecule has two atoms of hydrogen and one atom of sulphur (ii) 5 atoms because $\text{PO}_4^{3-}$ ion has one atom of phosphorus and four atoms of oxygen.
15.	What is law of conservation of mass ?
Ans:	Law of conservation of mass states that mass can be created nor destroyed in a chemical reaction. For example if we take x gram of lead nitrate solution in a beaker and add y gram of sodium chloride solution to it. We find that a white precipitate is formed. If we weigh the beaker after the reaction, we find that it is (x+y) gram. This shows that mass can neither be created nor be destroyed.
16.	If K and L shells of an atom are full, then what would be total number of electron in an atom? What is the valency of this element?
Ans:	Total number of electron in an atom = $2 + 8 = 10$ The shells are full then the valency of that element will be 0 . Element is Neon
17.	If the number of protons of an element is 8 and number of neutrons are also 8. Write the notation of that element.
Ans:	$\begin{matrix} \text{Mass number} \\ \text{Atomic Number} \end{matrix} \text{ Symbol of element or, } \begin{matrix} 16 \\ 8 \end{matrix} \text{O}$
18.	What does the formula of a compound indicate?
Ans:	(a) Name of the constituent elements (b) the relative number of atoms of each element in a single molecule
19.	Write the valency of sulphur in $\text{H}_2\text{S}$ , $\text{SO}_2$ and $\text{SO}_3$
Ans:	The valency of sulphur in $\text{H}_2\text{S}$ , $\text{SO}_2$ and $\text{SO}_3$ are 2,4,6 respectively.
20.	What is the differences between $2\text{H}$ and $\text{H}_2$ ?
Ans:	$2\text{H}$ means two atoms of hydrogen $\text{H}_2$ means a molecule of hydrogen which consists of its two atoms