

ATOMS AND MOLECULES

SUBJECT-CHEMISTRY

CHAPTER NO- 3

Atomic Mass and Molecular Mass.

PERIOD-6

CHANGING YOUR TOMORROW



LEARNING OBJECTIVE

Students will be able to

- Know about the Atomic Mass and Atomic mass unit.
- Get aware of the concept of Molecular mass.



Edit with WPS Office

ATOMIC MASS

- Atomic mass is the total of the masses of the electrons, neutrons, and protons in an atom, or in a group of atoms, the average mass.
- Mass of an atomic particle is called the atomic mass.
- This is commonly expressed as per the international agreement in terms of a unified atomic mass unit (AMU).
- It can be best defined as $1/12$ of the mass of a carbon-12 atom in its ground state.



Edit with WPS Office

MOLECULAR MASS

Molecular mass of an element is defined as the sum of the masses of the elements present in the molecule.

- Molecular mass is obtained by multiplying the atomic mass of an element with the number of atoms in the molecule and then adding the masses of all the elements in the molecule.
- Molecular mass is the algebraic sum of the masses of all the atoms present in a given molecule.
- Molecular mass of H_2O (water) can be calculated
- $(2 \times \text{Atomic Mass of Hydrogen}) + (1 \times \text{Atomic Mass of Oxygen})$
- $(2 \times 1) + (1 \times 16) = 18$ Units
- For example, in sulphuric acid (H_2SO_4), the ratio of hydrogen, Sulphur and oxygen is 2:1:4



Edit with WPS Office

MORE EXAMPLES OF MOLECULAR MASS

- For example, molecular mass of ammonia $\text{NH}_3 = (1 \times 14) + (3 \times 1) = 17$ Unit
- For example, molecular mass of water $\text{H}_2\text{O} = (2 \times \text{At. Mass of H}) + (1 \times \text{At. Mass of Oxygen}) = (2 \times 1) + (1 \times 16) = 18$ Unit
- For example, molecular mass of $\text{SO}_2 = (1 \times 32) + (2 \times 16) = 64$ Unit (u)
- For example, molecular mass of $\text{CO}_2 = (1 \times 12) + (2 \times 16) = 44$ u



Edit with WPS Office

HOME ASSIGNMENT

- Exercise-I (Q9, Q10 & Q11) Exercise-II Q6
- Calculate the Molecular Mass of the following :-
 - 1) $C_6H_{12}O_6$
 - 2) HNO_3
 - 3) $CaSO_4$



Edit with WPS Office

THANKING YOU

ODM EDUCATIONAL GROUP



Edit with WPS Office

