

Home assignment

Q) Fill in the blanks

1) Atoms are neutral.

2) Metals have variable valency.

3) The number of atoms present in a molecule of an element is called as atomicity.

4) The combining capacity of an element is known as valency.

5) Carbon is the element with valency 4.

6) The valency of Iron in  $Fe_2O_3$  is 3.

Q) Define the following -

1) Atom :- Atom is the smallest unit of matter element.

2) Molecules :- Molecule is the smallest unit of a compound which always has an independent existence.

3) Valency :- It is the number of electrons donated or accepted by the valence shell of an atom during chemical combination.

4) Radicals :- A radical is an atom of an element or a group of atoms of different.

5) Basic Radicals :- They have positive charge and are also called cations. All metallic ions and ammonium ion are basic radicals.

III) Answer the following

1) The valency of calcium is 2. Write the valencies of  $\text{CaO}$  and  $\text{CaCO}_3$

Ans) The valency of calcium is 2.

$\text{CaO}$  - The valency of O is 2

$\text{CaCO}_3$  - The valency of  $\text{CO}_3$  is 2

2) Differentiate between Acidic Radical and Basic radical.

Ans) Acidic radical :- i) They have negative charge and are also called anions.

ii) Most of the non-metallic ions and groups of non-metallic atoms with negative charge are acidic radicals.

Basic radicals :- 1) They have positive charge and also called cations.

ii) All metallic ions and ammonium ion are basic radicals.

3) What do you mean by molecular formula of a compound? Give an example?

Ans) The molecular formula of a compound is the existing molecules that are present in the total number of atoms of the element in a molecule. For example,  $H_2O$  is the molecular formula of water. It <sup>also</sup> means the symbolic representation of a molecule of a compound, is called its molecular formula.

4) Explain how a molecule of a compound is formed with an example.

Ans) When atoms of two or more elements join together in a fixed ratio by mass, a molecule of a compound is formed. For example, two atoms of hydrogen and one atom of oxygen combine to form a molecule of water.

5) Write 2 points of difference between Atoms and molecules.

Quesy Atom :- 1) An atom is the smallest particle of an element (matter) which may or may not have independent existence.

2) An atom represents all the properties of that element.

Molecules :- 1) A molecule is the smallest particle of an element or a compound capable of independent existence, made up of one or more than one or more than one atom of same or different types.

2) A molecule represents all the properties of that element or compound.

6) Explain variable valency with an example.

Ans Certain elements exhibit more than one valency, that means this property of having different capacity to combine with different elements is called variable valency.

Ex - In ferrous oxide valency of iron is +2, whereas in ferric oxide valency of iron is +3.

7) Write two points of difference between molecules and radicals.

### Molecules

- i) A molecule is the smallest particle of an element or a compound capable of independent existence, made up of one or more than one atom of same or different types.
- ii) A molecule represents all the properties of that element or compound.

### Radicals

- i) A radical is a single atom of an element or a group of atoms of different elements behaving as a single unit with positive or negative charge on it.
- ii) Oppositely charged radicals combine to form molecules of compounds.