

LAB ASSISTANT MODAL QUESTIONS WITH KEYS

SEED'S & ARCHANA COACHING CENTRE FOR PG TRB /TET English /Social / EVS & Tamil
DHARMAPURI.

10. Atoms and molecules SHORT NOTES ONLY 10th Std

1. The word atom is derived from the Greek word "Atomos" which means indivisible.
2. John Dalton modeled atoms as hard indivisible spheres.
3. Atom is considered to be a divisible particle.
4. Atoms of the same element may not be similar in all respects. eg: Isotopes (Cl_{35}^{17} , Cl_{37}^{17})
5. Atoms of different elements may be similar in some respects eg. Isobars (Ar_{40}^{18} , Ca_{40}^{20})
6. Atom is the smallest particle which takes part in chemical reactions.
7. The ratio of atoms in a molecule may be fixed and integral but may not be simple e.g., $C_{12}H_{22}O_{11}$ is not a simple ratio (Sucrose).
8. Atoms of one element can be changed into atoms of other element by transmutation.
9. The mass of an atom can be converted into energy. This is in accordance with Einstein's equation $E = mc^2$.
10. Amedeo Avogadro put forward hypothesis and is based on the relation between number of molecules and volume of gases.
11. Avogadro's Law: Equal volumes of all gases under the same conditions of temperature and pressure contain the equal number of molecules.
12. Avogadro's law plays an important role in (a) deducing atomicity of gases and (b) establishing the relation between vapour density and molecular mass.
13. The number of atoms present in one molecule of an element is called the atomicity of an element.
14. Depending upon the number of atoms in one molecule of an element, molecules are classified into monoatomic, diatomic, triatomic, and poly atomic molecules.
15. Avogadro's law enables us to changeover directly from a statement about volume of gases to a statement about molecules of gases and vice-versa.
16. Nitrogen and oxygen are called diatomic molecules and are written as N_2 and O_2 .
17. Atomicity of nitrogen is 2 and the atomicity of oxygen is 2.
18. Relative Molecular Mass is defined as the ratio of the mass of 1 molecule of the gas or vapour to the mass of 1 atom of hydrogen.
19. Vapour Density (V.D) is defined as the ratio of the mass of a certain volume of the gas or vapour to the mass of the same volume of hydrogen at the same temperature and pressure.
20. Avogadro's law is used to determine the atomicity of gases.
21. Avogadro's law is helpful in determining the molecular formula of gaseous compound.
22. Avogadro's law establishes the relationship between the vapour density and molecular mass of a gas.
23. Avogadro's law gives the value of molar volume of gases at STP.
24. Molar Volume of a gas at STP = 22.4 lit (or) 22400 cm³.
25. Avogadro's law explains Gay Lussac's law effectively.
26. Atoms and molecules are the building blocks of matter.
27. Atom is the ultimate particle of an element which may or may not have independent existence.
28. The atoms of hydrogen, oxygen, nitrogen, etc. do not have independent existence.

29. Atoms of helium, neon, argon, etc. do have independent existence.
30. All elements are composed of atoms.
31. A molecule is the simplest structural unit of an element (or) a compound which contains one (or) more atoms.
32. An atom is the smallest particle of an element.
33. A molecule is the smallest particle of an element or a compound.
34. An atom is a non bonded entity.
35. A molecule is a bonded entity.
36. An atom may or may not exist freely.
37. A molecule can exist freely.
38. Molecules are of two types, namely homo atomic molecules and hetero atomic molecules.
39. Homo atomic molecules are the molecules which are made up of atoms of the same element.
40. Most of the elementary gases consist of homo atomic molecules.
41. Hydrogen gas consists of two atoms of hydrogen (H_2).
42. Oxygen gas consists of two atoms of oxygen (O_2).
43. By the number of atoms present in the molecules they are classified as monoatomic, diatomic, triatomic or poly atomic molecules.
44. The molecules are made up of atoms of different elements.
45. H_2O , NH_3 , CH_4 , etc., are hetero atomic molecules.
46. Relative atomic mass of an element is the ratio of mass of one atom of the element to the mass of one atom of hydrogen taken as one unit.
47. Relative atomic mass of an element is the ratio of mass of one atom of element to the $1/12^{\text{th}}$ part of mass of one atom of carbon.
48. Relative atomic mass is a pure ratio and has no unit.
49. If the atomic mass of an element is expressed in grams, it is known as gram atomic mass.
50. Gram atomic mass of hydrogen = 1g.
51. Gram atomic mass of carbon = 12g.
52. Gram atomic mass of nitrogen = 14g.
53. Gram atomic mass of oxygen = 16g.
54. Gram atomic mass of sodium = 23g.
55. Atomic mass is expressed in atomic mass unit (amu).
56. One atomic mass unit is defined as $1/12^{\text{th}}$ part of the mass of one atom of carbon.
57. The relative molecular mass of an element or a compound is the ratio of mass of one molecule of the element or a compound to the mass of one atom of hydrogen.
58. The relative molecular mass of an element or a compound is the ratio of mass of one molecule of the element or a compound to the mass of $1/12^{\text{th}}$ part of mass of one atom of carbon.
59. Relative molecular mass is a pure ratio and has no unit.
60. If the molecular mass of a given substance is expressed in gram, it is known as gram molecular mass of that substance.
61. Molecular mass is the sum of atomic masses.
62. Number of atoms or molecules or ions present in one mole of a substance is called Avogadro number. Its value is 6.023×10^{23} .
63. Mole is defined as the amount of substance that contains as many specified elementary particles as the number of atoms in 12g of carbon-12 isotope.
64. One mole is defined as the amount of substance which contains Avogadro number

(6.023×10^{23}) of particles.

65. One mole of any substance contains Avogadro number of particles.

66. One mole of oxygen atoms represents 6.023×10^{23} atoms of oxygen.

you must refer books don't believe this plz just guide only

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