

## ATOMS AND MOLECULES (IX)

1. Name the scientist who proposed constant proportion and explain with the help of example.
2. Name the scientist who proposed the basic theory about the nature of matter and explain the theory.
3. H and O combine in ratio 1:8 by mass to form H<sub>2</sub>O. What mass of O gas would be require to react completely with 3g of H gas.
4. IUPAC stands for----? Write symbols of cobalt, lead, potassium.
5. What was limitation scientist face when it was assign C and atomic mass 1u and O as 1.33u?
6. What is the standard unit of atomic mass. Explain.
7. What are molecules? Why do they form bonds?
8. Name two elements which are mono atomic?
9. Write the ratios of the following (mass) water, ammonia, CO<sub>2</sub>.
10. What is polyatomic ion? Explain with example.
11. What is valency? How would you calculate that how many atoms of a element will combine with the atom(s) of another element. Explain with example.
12. Write some rules one has to follow while writing a chemical formula.
13. Write formulas of:- Hydrogen sulphide, Magnesium chloride, Aluminium oxide, Sodium nitrate, Sodium carbonate.
14. Write compounds name and main element present in  $Al_2(SO_4)_3$  ;  $CaCl_2$  ;  $K_2SO_4$  ;  $KNO_3$  ;  $CaCO_3$
15. a) Name the element used as a standard for atomic mass scale. b) Which particular atom of the above element is used for this purpose. c) what value has been given to the mass of this reference atom?
16. Give names and symbols of five familiar substances which you think are element.
17. What is meant by atomicity? Write atomicity of following oxygen, ozone, neon, sulphur, sodium.
18. Write the formula of the following compounds: 1) Water 2) Ammonia 3) Methane 4) Sulphur dioxide 5) Ethanol.
19. Explain the difference between 2N and N<sub>2</sub>.
20. Calculate the molecular masses of the following:- ZnO , Na<sub>2</sub>O, K<sub>2</sub>CO<sub>3</sub>

- a)Methane CH<sub>4</sub> (b)Ethane C<sub>2</sub>H<sub>6</sub> (c)Ethane C<sub>2</sub>H<sub>4</sub> (d)Ethyne C<sub>2</sub>  
(e)CH<sub>3</sub>ZOH  
f)CH<sub>3</sub>COOH.

24. Define atomic mass unit and define atomic mass of an element.

25. In an experiment, 4.90 gm of copper oxide was obtained from 3.92 gm of copper. In another experiment, 4.55 gm of copper oxide gave, on reduction, 3.64 gm of copper. Show with the help of calculations that these figures verify the law of constant proportions.

26. Mg and O combine in the ratio of 3:2 by mass to form magnesium oxide. What mass of O<sub>2</sub> gas would be required to react completely with 24 gm of Mg.

27. Calculate the no of iron atoms in a piece of iron weighing 2.8 gm. atomic mass of Fe = 56u

28. If one mole of carbon atoms weighs 12 gms. What is mass in gm of 1 atom of carbon.

29. How many grams of neon will have the same number of atoms as 4 gms of calcium AM: Ne = 20u, Ca = 40u.

30. Calculate the no of present in 0.051 gm of aluminium oxide.