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1. Give an example of triatomic gas.

2. Write the formulae and names of the compounds formed between

   a) Sodium and carbonate ions

   b) Aluminium and sulphate ions

   c) Barium and chloride ions

3. a) Calculate the molar mass of S_8

   b) Convert into mole   1) 12g of oxygen gas

                            2) 32g of oxygen molecule.

4. State the Law of conservation of mass & Law of definite proportion with the help of one example each.

5. State the postulate of Dalton's atomic theory which can explain law of definite proportions.

6. Element Z forms compounds ZH_3, ZCl_3, Z_2O_3 and ZP. What is its valency?

7. What is meant by the term chemical formula? Write the chemical formula of the following compounds

   a) Calcium sulphate   c) Sodium Oxide

   b) Aluminium chloride   d) Ammonium sulphate

8. a) Calculate the molecular mass of $CaCO_3$ (At mass Ca=40u, C=12u,O=16u)

   b) Verify by calculating that 5 moles of CO_2 and 5 moles of H_2O do not have the same mass

9. a) State the significance of one mole. If one mole of carbon atom weighs 12 grams. What is the mass (in grams) of 1 atom of carbon? How many atoms are there in 0.1 mole of sodium? (Na=23u)

   b) Which has more number of atoms 100g of sodium or 100g of iron

      (At mass Na=23u, Fe=56u)

   c) What is the mass of 2 moles of ethanol molecule(C2H5OH)? (C=12u,H=1u,O=16u)

10.   a) What is molar mass? Calculate the molar mass of carbon dioxide gas.

      b) Calculate the formula unit mass of Calcium chloride (atomic mass of Ca=40u, Cl-35.5u)

11.a) Write the chemical formula of a compound using zinc ion and phosphate ion. b) Calculate the ratio by mass of atoms present in a molecule of carbon dioxide

(Given C=12,O=16)

12. Define relative atomic mass. Name one tetra atomic and one octa atomic element

13. A gas jar contains 1.7 g of ammonia gas. Calculate the following:

1)Molar mass of Ammonia

2) How many moles of ammonia are present in the gas-jar?

3) How many molecules of ammonia are present in the sample?

14. If the valency of an element X is 3, write the chemical formula of its oxide.

15. How would you differentiate between a molecule of element and a molecule of compound? Write one example of each type.

16.Identify the polyatomic ions in the following compounds and compute the molar mass of the compounds.

a) $MgCO_3$ b)Na_2SO_4

(atomic mass of Mg=24u, C=12u, O=16u, S=32u, Na=23u)

17.How many kinds of atoms are present in a molecule of coppercarbonate?

18.Write the symbols for the following elements as proposed by Dalton:

a)Hydrogen b)Sulphur

19. Who introduced the word mole and in which year. What is Avogadro number constant?

20.What are cations ? Give two examples.

21.What are the two forms of oxygen found in the atmosphere.

22. Calculate the following quantities in 5.6 g of nitrogen (atomic mass of N=14u)

a) Number of moles of N2

b) Number of molecules of N2

c) Number of atoms of nitrogen.

23. If bromine atom is available in the form of two isotopes $^{79}_{35}$ Br (49.7%) and $^{81}_{35}$ Br (50.3%) calculate the average atomic mass of bromine atom.