CLASS – XI CHEMISTRY ASSIGNMENT NO. 1 BASIC CONCEPTS

Q1. Classify the following into elements, compounds and mixtures. Divide mixtures into homogeneous and heterogeneous (i) marble (ii) Honey (ii) Toothpaste (i) Sugar (v) gold (vi) Niter (vii) Iodized Table salt (viii) Iron (ix) Steel (x) Distilled water (xi) slaked lime (xii) oxygen (xiii) Gasoline (xiv) silk (xv) Tap water.

Q2. Classify following into metals and non-metals;- (i) Helium (ii) Sodium (iii) Mercury (iv) graphite (v) Carbon (vi) silicon (vii) Magnesium (viii) Phosphorous (ix) Arsenic (x) Antimony

Q3. How will you separate the constituents present in the following mixtures: - (i) common salt and water

(ii) Iodine and sand (iii) sugar and sulphur (iv) Kerosene and water (v) salt + sand + sulphur + Iron

Q4. With the help of example justify each statement for different laws of chemical combination.

Q5 (i) How many gram molecules are present in 4.9g of H_2SO_4?

(ii) Calculate the mass of 0.72 molecules of CO_2.

Q6. Calculate the number of atoms in: - (i) 0.25 mole atoms of C (ii) 0.20 mole molecules of O_2.

Q7. How many atoms of carbon and oxygen are present in 1.5 mole of CO_2?

Q8. How many molecules and atoms of phosphorus are present in 0.1 moles of P_4 molecules?

Q9. How many silver atoms are present in a piece of jewellery weighing 10.78 g? Ag = 107.8 a.m.u.

Q10. What weight of calcium contains the same number of atoms as per present in 3.2g of sulphur?

Q11. Calculate the number of atoms present in: - (i) 52 moles of He (ii) 52 a.m.u. of He (iii) 52g of He

Q12. Calculate the total number of electrons present in 1.6g of methane.

Q13. How many atoms of each type are present in 143g of washing soda ($NaCO_3$. 10 H_2O)?

Q14. Calculate the no. of moles of phosphorus in 92.9 g of 'P' assuming that molecular formula of 'P' is P_4. Also calculate the no. of atoms and molecules of P in the sample.

Q15. What is the mass of 0.04 mol of Co_2?

Q16. Calculate the mass of water molecule?

Q17. How many molecules of water are there in 1L of water? The density of water is 1.0 g / ml.

Q18. How many moles of hydrogen are there in 0.925g of Ca $(OH)_2$? Ca = 40 a.m.u.

Q19. Calculate the mass of 1 molecule of $CS_{2?}$

Q20. 1 million atoms of silver weigh 1.79 x 10^{-16}g. Calculate the atomic mass of silver.

Q21. Calculate the weight of CO moving same no. of oxygen atoms as are present in 88g of carbon dioxide?

Q22. Chlorophyll contains 2.68% of mg by weight. Calculate no. of mg atoms in 2.00 g of chlorophyll.(at mass of Mg = 24)

Q23. The cost of table salt and sugar are Rs. 2 per kg. and Rs. 6 per kg. respectively. Calculate the cost per mole.

Q24. Calculate the no. of gold atoms in 300 mg. Of a gold ring of 20 carat gold (at mass of gold = 197, pure gold is 24 carat).

Q25. Find the mass of an atom of silver. The molar mass of Ag atom is 108 g mol^{-}.