INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CH 1: Some Basic Concepts of Chemistry

Name: _____ Date: 15.04.2024 Class: XI Sec: A

Answer the following

1. Calculate the molecular mass of the following

   (i) CO_2 (ii) CH_4 (iii) NaOH (iv) NH_3

2. Calculate the percentage of nitrogen in NH_3. (Atomic mass of N=14, H=1)

3. Classify the following into elements, compounds and mixtures:

   Water, tea, silver, steel, carbon dioxide and platinum.

4. How many significant figures are present in 0.0025, 600.0, 5.0012 and 1.050×10^4?

5. What will be the molarity of a solution, which contains 5.85 g of NaCl (s)per 500 mL?

6. Calculate the sum of 7.21, 10.245, 0.0548 in terms of significant figures.

7. If the density of a solution is 3.12 g m/L, the mass of 1.5 mL solution in significant figures is ----------.

8. A substance has molecular formula $C_6H_{12}O_6$. What is its empirical formula?

9. Calculate the number of molecules present in 2.5 moles of water?

10. Calculate the mass percentage of different elements present in sodium sulphate (Na_2SO_4).

11. An organic compound contains carbon, hydrogen and oxygen. Its elemental analysis gave C, 38.71% and H, 9.67%. The empirical formula of the compound would be?

12. If the speed of light is 3.0×10^8 m/s, calculate the distance covered by light in 2.00 ns.

13. State the difference between molarity and molality.

14. 16g of Oxygen has the same number of molecules as in

    (i) 16g of CO

    (ii) 14 g of N_2

    (iii) 2 g of H_2

    (iv) 28g of N_2

15. What will be the mass of one ^{12}C atom in g?

16. Calculate the number of atoms in each of the following

(i) 52 moles of Ar

(ii) 52 g of He

17. State Gay Lussac's Law of Gaseous volumes.

18. How many grams of hydrogen chloride (HCl) are required to prepare 4 litre of 5M HCl in water?

19. How many molecules of SO_2 are present in 11.2 L at STP?

20. Express the following in the scientific notation:

0.0048, 8008, 500.0 and 234,000

21. A measured temperature on Fahrenheit scale is 200 ^{O}F, what will this reading be on Celsius scale?

22. If 500 mL of a 5 M solution is diluted to 1500 mL, what will be the molarity of the solution obtained?

23. How many atoms of calcium are there in 2g of Ca? (Atomic mass of Ca = 40u)

24. Convert the following into basic units:

a. 30.4 pm

b. 40.2 ns

c. 1234 g

25. What does the following prefixes stand for?

(i) Pico (ii) Nano (iii) Micro (iv) Deci

26. Balance the following equations:

(i) $H_3PO_3 \rightarrow H_3PO_4 + PH_3$

(ii) $Ca + H_2O \rightarrow Ca(OH)_2 + H_2$

(iii) $Fe_2(SO_4)_3 + NH_3 + H_2O \rightarrow Fe(OH)_3 + (NH_4)_2SO_4$

(iv) $Cl_2 + NaOH \rightarrow NaCl + NaClO_3 + H_2O$
