DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : CHEMISTRY**
DATE : **DPP No. : 3**

Topic :- SOME BASIC CONCEPTS OF CHEMISTRY

1. For the reaction, $A + 2B \longrightarrow C$, 5 moles of A and 8 moles of B will produce:
   a) 5 moles of C b) 4 moles of C c) 8 moles of C d) 13 moles of C

2. Which sample contains the largest number of atoms?
   a) 1 mg of C_4H_{10} b) 1 mg of N_2 c) 1 mg of Na d) 1 mL of water

3. An aromatic hydrocarbon with empirical formula C_5H_4 on treatment with concentrated H_2SO_4 gave a monosulphonic acid. 0.104 g of the acid required 10 mL of $\frac{N}{20}$ NaOH for complete neutralisation. The molecular formula of hydrocarbon is
   a) C_5H_4 b) $C_{10}H_8$ c) $C_{15}H_{12}$ d) $C_{20}H_{16}$

4. If isotopic distribution of C-12 and C-14 is 98% and 2% respectively then the number of C-14 atoms in 12 g of carbon is
   a) 1.032×10^{22} b) 3.01×10^{22} c) 5.88×10^{23} d) 6.023×10^{23}

5. Zinc sulphate contains 22.65% of zinc and 43.9% of water of crystallization. If the law of constant proportions is true then the weight of zinc required to produce 20 g of the crystals will be
   a) 45.3 g b) 4.53 g c) 0.453 g d) 453 g

6. The number of gram molecules of chlorine in 6.02×10^{25} hydrogen chloride molecules is
   a) 10 b) 100 c) 50 d) 5

7. The net charge on ferrous ion is:
   a) +2 b) +3 c) +4 d) +5

8. H_2O_2 solution used for hair bleaching is sold as a solution of approximately 5.0 g H_2O_2 Per 100 mL of the solution. The molecular weight of H_2O_2 is 34. The molarity of this solution is approximately:
   a) 3.0 b) 1.5 c) 0.15 d) 4.0

9. 4.6×10^{22} atoms of an element weigh 13.8 g. The atomic weight of element is
   a) 290 b) 180 c) 34.4 d) 10.4

10. The weight of 50% (wt./wt.) solution of HCl required to react with 100 g of $CaCO_3$ would be:
    a) 73 g b) 100 g c) 146 g d) 200 g

11. An element, X has the following isotopic composition
    ^{200}X: 90%
    ^{199}X: 8.0%
    ^{202}X: 2.0%
    The weighted average atomic mass of the naturally occurring element X is closed to
    a) 200 u b) 210 u c) 202 u d) 199 u

12. Law of constant composition is same as the law of
    a) Conservation of mass
    b) Conservation of energy
    c) Multiple proportion
    d) Definite proportion

13. One atom of an element X weight 6.643×10^{-23}g. number of moles of atom in 20 kg is
    a) 140
    b) 150
    c) 250
    d) 500

14. The reaction, $2C + 2O_2 \longrightarrow 2CO_2$is carried out by taking 24 g carbon and 96 g O_2. Which one is limiting reagent?
    a) C
    b) O_2
    c) CO_2
    d) None of these

15. 1000 g aqueous solution of $CaCO_3$ contains 10 g of calcium carbonate. Concentration of solution is:
    a) 10 ppm
    b) 100 ppm
    c) 1000 ppm
    d) 10000 ppm

16. The maximum amount of $BaSO_4$ precipitated on mixing 20 mL of 0.5 M $BaCl_2$ with 20 mL of 1 M H_2SO_4 is:
    a) 0.25 mole
    b) 0.5 mole
    c) 1 mole
    d) 0.01 mole

17. The percentage of an element M is 53 in its oxide of molecular formula M_2O_3. Its atomic mass is about
    a) 45
    b) 9
    c) 18
    d) 27

18. H_3BO_3 is:
    a) Monobasic and weak Lewis acid
    b) Monobasic and weak Bronsted acid
    c) Monobasic and strong Lewis acid
    d) Tribasic and weak Bronsted acid

19. A sample of peanut oil weighing 1.5763 g is added to 25 mL of 0.4210 M KOH after saponification is complete 8.46 mL of 0.2732 M H_2SO_4 is needed to neutralise excess KOH. The saponification number of peanut oil is:
    a) 209.6
    b) 108.9
    c) 98.9
    d) 218.9

20. What quantity of ammonium sulphate is necessary for the production of NH_3 gas sufficient to neutralize a solution containing 292 g of HCl? $[HCl = 36.5, (NH_4)_2SO_4 = 132, NH_3 = 17]$
    a) 272 g
    b) 403 g
    c) 528 g
    d) 1056 g