

DPP

DAILY PRACTICE PROBLEMS

CLASS : XIth
DATE :

Solutions

SUBJECT : CHEMISTRY
DPP No. : 5

Topic :- SOME BASIC CONCEPTS OF CHEMISTRY

1 (d)

$$\text{Mole of Ca} = \frac{30}{40} \quad (\text{the largest value})$$

2 (a)

$$\text{Meq. of NaOH} = 0.1 V$$

$$\text{Meq. of CH}_3\text{COOH} = 0.1 V$$

$$\therefore \text{Meq. of CH}_3\text{COONa formed} = 0.1 V$$

The solution will be alkaline due to hydrolysis of CH₃COONa.

3 (b)

According to law of conservation of mass,

Mass of reactants = mass of products

$$\therefore 6.3 + 15.0 = 18.0 + x$$

$$\text{Or } x = 21.3 - 18.0 = 3.3 \text{ g}$$

4 (d)

$$\text{Mole of glucose} = \frac{6.02 \times 10^{22}}{6.02 \times 10^{23}} = 0.1$$

$$\therefore M_{\text{glucose}} = \frac{0.1 \times 1000}{50} = 2$$

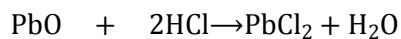
5 (b)

$M > m$ provided d solvent ≥ 1

6 (b)

$$m = \frac{4}{40 \times 0.996} = 0.1$$

7 (c)



$$\text{Eq. at } t = 0 \quad \frac{6.5 \times 2}{224} \quad \frac{3.2}{36.2} \quad 0 \quad 0$$

$$= 0.058 \quad 0.088 \quad 0 \quad 0$$

$$\text{Eq. after} \quad 0 \quad 0.030 \quad 0.058 \quad 0.058$$

reaction

$$\therefore \text{Mole of PbCl}_2 \text{ formed} = \frac{0.058}{2} = 0.029$$

- 8 **(a)**
 Meq. of $\text{H}_2\text{SO}_4 = 50 \times 0.1 \times 2 = 10$;
 Meq. of $\text{NaOH} = 50 \times 0.1 = 5$
 \therefore Meq. of H_2SO_4 left = $10 - 5$;
 Solution is acidic.
- 9 **(a)**
 18 mL H_2O or 18 g H_2O has $10N$ electrons.
- 10 **(b)**
 The compound is $\text{C}_4\text{H}_8\text{O}_2$;
 Mol. wt. = 88
 \therefore Vapour density = 44
- 11 **(b)**
 Meq. of oxalic acid = Meq. of NaOH :
 $\therefore \frac{w}{126/2} \times 1000 = 1000 \times 1$;
 $\therefore w = 63$ g
- 12 **(b)**
 Mole of sucrose = $\frac{\text{mass of sucrose (in gram)}}{\text{molecular weight of sucrose}}$
 $= \frac{25.6}{342.3} = 0.0747882$
 Formula of sucrose = $\text{C}_{12}\text{H}_{22}\text{O}_{11}$
 Number of H atoms in 1 mole of sucrose
 $= 22 \times 6.023 \times 10^{23}$
 Number of H atoms in 0.0747882 mole of sucrose
 $= 22 \times 6.023 \times 10^{23} \times 0.074788$
 $= 9.9 \times 10^{23}$
- 13 **(c)**
 Liquid HCl is 100% pure
 $\therefore M = \frac{100 \times 1.17 \times 1000}{36.5 \times 100} = 32.05$
- 14 **(a)**
 Meq. of NaOH = Meq. of acid;
 $20 \times 0.4 = 40 \times N$;
 $\therefore N = 0.2$ or $M = 0.1$
- 15 **(c)**
 Mass of solute = 120 g
 Mass of water = 1000 g
 Mass of solution = 1120 g

$$\therefore \text{Volume of solution } \left(\frac{m}{d}\right) = \frac{1120}{1.15} \text{ mL}$$

$$\text{Milli mole} = M \times V_{\text{in mL}}$$

$$\frac{120}{60} \times 1000 = M \times \frac{1120}{1.15}$$

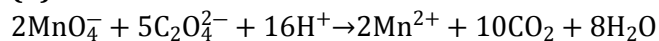
$$\therefore M = 2.05$$

16 **(a)**

$$\text{Eq. wt.} = \frac{\text{mol. wt.}}{\text{acidity}}$$

NH₃ is monoacidic base.

17 **(b)**



$$20 \text{ mL of } 0.1 \text{ M KMnO}_4 = 20 \times 0.1 = 2 \text{ mmol}$$

$$\therefore 2 \text{ mmol of KMnO}_4 \equiv 5 \text{ mmol of C}_2\text{O}_4^{2-}$$

$$50 \text{ mL of } 0.1 \text{ M H}_2\text{C}_2\text{O}_4 = 50 \times 0.1 = 5 \text{ mmol}$$

Hence, 20 mL of 0.1 M KMnO₄

$$\equiv 50 \text{ mL of } 0.1 \text{ M H}_2\text{C}_2\text{O}_4$$

18 **(c)**

Solutions of known strength are prepared by dissolving solute in solvent in a measuring flask.

19 **(a)**

Let the percent abundance of lighter isotope is x .

$$\therefore \text{Atomic mass, } z = \frac{x(z-1) + (100-x)(z+2)}{z+100-x}$$

$$3x = 200 \text{ or } x = 66.6\%$$

20 **(a)**

$$\frac{\text{Wt. of metal oxide}}{\text{Wt. of metal chloride}} = \frac{\text{Eq. wt. of metal} + \text{Eq. wt. of oxide}}{\text{Eq. wt. of metal} + \text{Eq. wt. of chloride}}$$

$$\frac{3}{5} = \frac{E + 8}{E + 35.5}$$

$$E = 33.25$$

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	D	A	B	D	B	B	C	A	A	B
Q.	11	12	13	14	15	16	17	18	19	20
A.	B	B	C	A	C	A	B	C	A	A

PE