

DPP

DAILY PRACTICE PROBLEMS

CLASS : XIth
DATE :

Solutions

SUBJECT : CHEMISTRY
DPP No. : 8

Topic :- SOME BASIC CONCEPTS OF CHEMISTRY

1 (b)
It remains unchanged.

2 (d)
Given, % of C=54.55%
% of H=9.09%
% of O=36.36%

Element	%	At. no.	Ratio of atoms	Simplest ratio
C	54.55	12	$54.55/12=4.54$	$4.54/2.2=7=2$
H	9.09	1	$9.09/1=9.0$	$9.09/2.2=7=4$
O	36.36	16	$36.36/16=2.27$	$2.27/2.2=7=1$

∴ Empirical formula is C₂H₄O.

3 (a)
⁶C¹² contains 6 *N* protons, 6 *N* electrons and 6 *N* neutrons.

4 (d)
Meq. of H₃PO₄ = Meq. of Ca(OH)₂;
 $0.25 \times 3 \times V = 25 \times 0.03 \times 2$
∴ $V = 2$ mL

5 (a)
 $2\text{PH}_3(\text{g}) \rightarrow 2\text{P}(\text{s}) + 3\text{H}_2(\text{g})$
100 0 0 Before dissociation
0 - 150 After dissociation

6 **(c)**

$$m = \frac{\text{moles of CH}_3\text{COOH}}{\text{wt. of solvent in kg}} = \frac{2.05 \times 1000}{897} = 2.285$$

wt. of solvent = wt. of solution - wt. of solute
 $= [1000 \times 1.02 - 2.05 \times 60] = 897 \text{ g}$

7 **(c)**

Meq. of NaOH = Meq. of HCl

$$100 \times 0.1 = 10$$

$$\therefore \frac{\text{wt.}}{40} \times 1000 = 10; \quad \therefore w_{\text{NaOH}} = 0.4\text{g}$$

8 **(a)**

Meq. of $\text{Na}_2\text{CO}_3 = 250 \times 0.25 \times 2 = 125$

$$\therefore \frac{w}{53} \times 1000 = 125$$

$$\therefore w = 6.625$$

9 **(a)**

$$\frac{n}{n+N} = 0.2;$$

$$\therefore \frac{N}{n+N} = 0.8$$

Thus, $\frac{n}{N} = \frac{1}{4}$

or $\frac{n \times 18 \times 1000}{W \times 1000} = \frac{1}{4}$

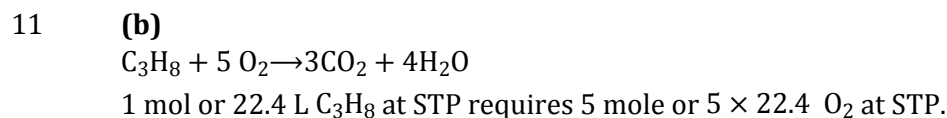
or $\frac{\text{molality} \times 18}{1000} = \frac{1}{4}$

10 **(a)**

$$\% \text{by weight} = \frac{\text{weight of solute}}{\text{weight of solution}} \times 100$$

or $20 = \frac{w}{(w+60)} \times 100$

or $w = 15\text{g}$



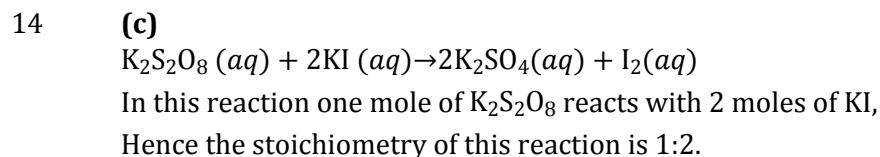
12 **(d)**

22.4 litre refers for mol. wt.

$\therefore 11.2$ litre refers for $\frac{\text{mol. wt.}}{2} = \text{vapour density.}$

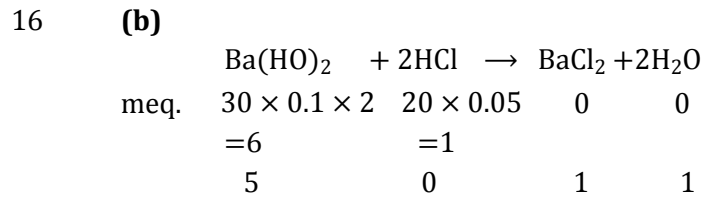
13. **(c)**

$$N = \frac{10 \times 1000}{60 \times 100} = 1.66$$



15 **(d)**

$$\text{Mole fraction} = \frac{\text{moles of alcohol}}{\text{total moles}} = \frac{2}{2+6} = \frac{2}{8} = 0.25$$



$\therefore [\text{OH}^-] = \frac{5}{50} = 0.1 \text{ M}$

17 **(a)**
 NaHCO_3 being an acid salt will react with NaOH as,
 $\text{NaOH} + \text{NaHCO}_3 \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O}$

18 **(b)**
 Eq. of metal oxide = Eq. of oxygen

$$\frac{100}{E} = \frac{20}{8} \quad \therefore E = 40$$

19 **(b)**
 According to the equation,
 $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}$

No. of moles of $\text{NaCl} = \frac{4.77}{58.5} = 0.08154$

No. of moles of $\text{AgNO}_3 = \frac{5.77}{170} = 0.03394$

Thus, AgNO_3 is the limiting reagent in the reaction.

Now, applying POAC for Ag (as Ag atoms are conserved in the reaction)

Moles of Ag in $\text{AgNO}_3 = \text{moles of Ag in AgCl}$

Or $1 \times \text{moles of AgNO}_3 = 1 \times \text{moles of AgCl}$

Or $0.03394 \times 143.4 (\text{for AgCl}) = 4.87 \text{ g}$

20 **(d)**
 $100 \text{ ML } \text{O}_2, \text{NH}_3 \text{ and } \text{CO}_2 = \frac{0.1}{22.4} = \frac{1}{224} \text{ mol}$

For O_2 no. of molecules = $\frac{1}{224} \times 6.023 \times 10^{23}$

For NH_3 no. of molecules = $\frac{1}{224} \times 6.023 \times 10^{23}$

For CO_2 no. of molecules = $\frac{1}{224} \times 6.023 \times 10^{23}$

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

P E