DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth
DATE :

Solutions

SUBJECT : CHEMISTRY
DPP No. : 7

Topic :- SOME BASIC CONCEPTS OF CHEMISTRY

1 **(c)**

Mass of 1 atom $= 1.8 \times 10^{-22}$g

Mass of 6.02×10^{23} atoms

$= 6.02 \times 10^{23} \times 1.8 \times 10^{-22}$g

$= 6.02 \times 1.8 \times 10$g

$= 108.36$g

$\therefore$ Atomic mass of element $= 108.36$

2 **(d)**

9.108×10^{-31}kg $=$ 1electron

$\therefore \quad 1\text{kg} = \frac{1}{9.108 \times 10^{-31}}$ electron

$= \frac{1}{9.108 \times 10^{-31}} \times \frac{1}{6.023 \times 10^{23}}$ mole electron

3 **(c)**

244 g $BaCl_2 \cdot 2H_2O$ contains 2 moles of water.

4 **(b)**

16 g $CH_4 = 1$ mole $CH_4 = N$ molecules of CH_4

5 **(c)**

$2(NH_4)_2HPO_4 \equiv P_2O_5$

264g 142g

$\%$ of $P_2O_2 = \frac{\text{wt.of } P_2O_5}{\text{wt.of salt}} \times 100$

$= \frac{142}{264} \times 100$

$= 53.78\%$

6 **(d)**

$KMnO_4$ reacts with oxalic acid according to the following equation.

$2MnO_4^- + 5C_2O_4^{2-} + 16H^+ \rightarrow 2Mn^{2+} + 10CO_2 + 8H_2O$

Eq. mass of $KMnO_4 = \frac{\text{mol.mass}}{7-2}$

$N_{KMnO_4} = 5 \times$ molarity$=5 \times 10^{-4}$

Eq. mass of $C_2O_4^{2-} = \frac{\text{mol. mass}}{2(4-3)} = \frac{\text{mol. mass}}{2}$

$N_{C_2O_4^{2-}} = 2 \times$ molarity$= 2 \times 10^{-2}$

$N_1V_1 = N_2V_2$

$5 \times 10^{-4} \times V_1 = 2 \times 10^{-2} \times 0.5$

$V_1 = \frac{2 \times 10^{-2} \times 0.5}{5 \times 10^{-4}} = 20$ L

8 **(a)**

Mohr's salt is $(NH_4)_2SO_4.FeSO_4.6H_2O$

The equation is

$5Fe^{2+} + MnO_4^- + 8H^+ \rightarrow 5Fe^{3+} + Mn^{2+} + 4H_2O$

Total change in oxidation number of iron

$= (+3) - (+2)$

$= +1$

So, equivalent wt. of Mohr's salt

$= \frac{\text{Mol.wt.of Mohr's salt}}{1}$

$= \frac{392}{1}$

$= 392$

11 **(c)**

For minimum molecular mass, there must be one S atom per insulin molecule.

If 3.4 g S is present, the molecular mass = 100

$\therefore$ If 32 g S is present, the molecular mass $= \frac{100 \times 32}{3.4}$

$= 941.176$

12 **(d)**

200 cc of NH_3 at STP contains maximum number of molecules because NH_3 compound has lowest molecular weight and highest volume than other compounds.

13 **(a)**

N molecule of $H_2O = 18$ g

14 **(d)**

$2C_2H_2 + 5O_2 \rightarrow 4CO_2 + 2H_2O$

2 cc 5 cc

100 cc 250 cc

Hence, air will be needed $= \frac{100}{20} \times 250$

$=1250$ cc

15 **(a)**

Eq. of ca = Eq. of O;

$\frac{1.35}{E} = \frac{0.53}{8}$

$\therefore \quad E = 20.37$

16 **(b)**

$$N = \frac{2.7 \times 1000}{(98/3) \times 250} = 0.33$$

17 **(c)**

Elements react in same number of equivalent and give same number of equivalents of products. Also equivalent $= \frac{\text{weight}}{\text{equivalent weight}}$

18 **(c)**

$$W_{N_2} = \frac{1 \times P \times 28}{RT}; W_{CO} = \frac{1 \times P \times 28}{RT}; W_{O_2} = \frac{7}{8} \times \frac{P \times 32}{RT}$$

19 **(c)**

Meq. of NaOH = Meq. oxalic acid;

$0.1 \times 1 \times V = 20 \times 0.05 \times 2;$

$\therefore \quad V = 20$ mL

20 **(b)**

$$\text{M.f.} = \frac{\text{moles of solute}}{\text{moles of solute} + \text{moles of water}}$$

$$= \frac{1}{1 + \frac{1000}{18}} = 0.018$$

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