

# DPP

DAILY PRACTICE PROBLEMS

CLASS : XI<sup>th</sup>  
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  $6.02 \times 10^{23}$  atoms  
=  $6.02 \times 10^{23} \times 1.8 \times 10^{-22}$ g  
=  $6.02 \times 1.8 \times 10$ g  
= 108.36g  
 $\therefore$  Atomic mass of element = 108.36
- 2 (d)  
 $9.108 \times 10^{-31}$ kg = 1electron  
 $\therefore$   $1\text{kg} = \frac{1}{9.108 \times 10^{-31}}$  electron  
=  $\frac{1}{9.108 \times 10^{-31}} \times \frac{1}{6.023 \times 10^{23}}$  mole electron
- 3 (c)  
244 g  $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$  contains 2 moles of water.
- 4 (b)  
16 g  $\text{CH}_4$  = 1 mole  $\text{CH}_4$  =  $N$  molecules of  $\text{CH}_4$
- 5 (c)  
 $2(\text{NH}_4)_2\text{HPO}_4 \equiv \text{P}_2\text{O}_5$   
 $\frac{264\text{g}}{264\text{g}} \quad \frac{142\text{g}}{142\text{g}}$   
% of  $\text{P}_2\text{O}_5$  =  $\frac{\text{wt. of P}_2\text{O}_5}{\text{wt. of salt}} \times 100$   
=  $\frac{142}{264} \times 100$   
= 53.78%
- 6 (d)  
 $\text{KMnO}_4$  reacts with oxalic acid according to the following equation.  
 $2\text{MnO}_4^- + 5\text{C}_2\text{O}_4^{2-} + 16\text{H}^+ \rightarrow 2\text{Mn}^{2+} + 10\text{CO}_2 + 8\text{H}_2\text{O}$   
Eq. mass of  $\text{KMnO}_4$  =  $\frac{\text{mol.mass}}{7-2}$   
 $N_{\text{KMnO}_4} = 5 \times \text{molarity} = 5 \times 10^{-4}$

$$\text{Eq. mass of } \text{C}_2\text{O}_4^{2-} = \frac{\text{mol. mass}}{2(4-3)} = \frac{\text{mol. mass}}{2}$$

$$N_{\text{C}_2\text{O}_4^{2-}} = 2 \times \text{molarity} = 2 \times 10^{-2}$$

$$N_1V_1 = N_2V_2$$

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

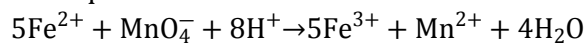
$$V_1 = \frac{2 \times 10^{-2} \times 0.5}{5 \times 10^{-4}} = 20 \text{ L}$$

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**(a)**

Mohr's salt is  $(\text{NH}_4)_2\text{SO}_4 \cdot \text{FeSO}_4 \cdot 6\text{H}_2\text{O}$

The equation is



Total change in oxidation number of iron

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

$$= +1$$

So, equivalent wt. of Mohr's salt

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

$$= \frac{392}{1}$$

$$= 392$$

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**(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

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

$$= 941.176$$

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**(d)**

200 cc of  $\text{NH}_3$  at STP contains maximum number of molecules because  $\text{NH}_3$  compound has lowest molecular weight and highest volume than other compounds.

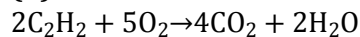
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**(a)**

$N$  molecule of  $\text{H}_2\text{O} = 18 \text{ g}$

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**(d)**



$$2 \text{ cc} \quad 5 \text{ cc}$$

$$100 \text{ cc} \quad 250 \text{ cc}$$

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

$$= 1250 \text{ cc}$$

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**(a)**

Eq. of ca = Eq. of O;

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

$$\therefore E = 20.37$$

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**(b)**

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

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**(c)**

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

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**(c)**

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

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**(c)**

Meq. of NaOH = Meq. oxalic acid;

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

$$\therefore V = 20 \text{ mL}$$

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**(b)**

$$\begin{aligned} \text{M.f.} &= \frac{\text{moles of solute}}{\text{moles of solute} + \text{moles of water}} \\ &= \frac{1}{1 + \frac{1000}{18}} = 0.018 \end{aligned}$$

PE

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

**PE**