DAILY PRACTICE PROBLEM OF PHYSICAL CHEMISTRY FOR NEET

BY

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MOLE CONCEPT

ETOOSINDIA
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DPP-1

1. A sample of ammonium phosphate $(NH_4)_3PO_4$ contains 3.18 moles of hydrogen atoms. The number of moles of oxygen atoms in the sample is

(1) 0.265 (2) 0.795 (3) 1.06 (4) 4.00

Ans. **(3)**

2. The total number of electrons im 1.6 g of CH_4 to that in 1.8 g of H_2O

(1) Double (2) Same (3) Triple (4) One fourth

Ans. **(2)**

3. Which has maximum molecules ?

(1) 7 g N_2O (2) 20 g H_2 (3) 16 g NO_2 (4) 16 g SO_2

Ans. **(2)**

4. The maximum number of molecules is present in

(1) 15 L of H_2 gas at STP (2) 5 L of N_2 gas at STP

(3) 0.5 g of H_2 gas (4) 10 g of O_2 gas

Ans. **(1)**

5. The number of atoms in 0.1 mol of a tetraatomic gas is ($N_A = 6.02 \times 10^{23}$ mol^{-1})

(1) 2.4×10^{22} (2) 6.026×10^{22} (3) 2.4×10^{23} (4) 3.600×10^{23}

Ans. **(3)**

6. 5.6 litre of oxygen at NTP is equivalent to –

(1) 1 mole (2) ½ mole (3) ¼ mole (4) 1/8 mole

Ans. **(3)**

7. A gas is found to have the formula $(CO)_x$. It's VD is 70 the value of x must be:-

(1) 7 (2) 4 (3) 5 (4) 6

Ans. **(3)**

8. Number of neutrons present in 1.7 gms of ammonia is -

(1) N_A (2) $N_A/10 \times 4$ (3) $(N_A/10) \times 7$ (4) $N_A \times 10 \times 7$

Ans. **(3)**

9. The number of atoms present in 0.5g atom of nitrogen is same as the atoms in –

(1) 12g of C (2) 32g of S (3) 8g of oxygen (4) 24g of Mg

Ans. **(3)**

10. The weight of one atom of Uranium is 238 amu. Its actual weight is .... gm.

(1) 1.43×10^{26} (2) 3.94×10^{-22} (3) 6.99×10^{-23} (4) None of these

Ans. **(2)**

DPP-2

1. Two metallic oxides contain 27.6% and 30% oxygen respectively. If the formula of the first oxide is X_3O_4, that of the second will be

(1) XO (2) XO_2 (3) X_2O_5 (4) X_2O_3

Ans. **(4)**

2. Calculate the molality of solution containing 3 g glucose dissolved in 30 g of water. (molar mass of glucose =180)

(1) 0.50 m (2) 0.56 m (3) 0.091 m (4) 0.05 m

Ans. **(2)**

3. How many grams of NaOH should be added to water to prepare 250 ml solution of 2 M NaOH ?

(1) 9.6×10^3 (2) 2.4×10^3 (3) 20 (4) 24

Ans. **(3)**

4. Haemoglobin contains 0.334% of iron by weight. The molecular weight of haemoglobin is approximately 67200. The number of iron atoms (Atomic weight of Fe is 56) present in one molecule of haemoglobin is

(1) 4 (2) 6 (3) 3 (4) 2

Ans. **(1)**

5. The number of atoms of Cr and O are 4.8×10^{10} and 9.6×10^{10} respectively. Its empirical formula is –

(1) Cr_2O_3 (2) CrO_2 (3) Cr_2O_4 (4) None

Ans. **(2)**

6. The density of air is 0.001293 g ml^{-1}. It's vapour density is –

(1) 143 (2) 14.3 (3) 1.43 (4) 0.143

Ans. **(2)**

7. Cortisone is a molecular substance containing 21 atoms of carbon per molecule. The mass percentage of carbon in cortisone is 69.98%. Its molar mass is :

(1) 176.5 (2) 252.2 (3) 287.6 (4) 360.1

Ans. **(4)**

8. 12 g of alkaline earth metal gives 14.8 g of its nitride. Atomic weight of metal is -

(1) 12 (2) 20 (3) 40 (4) 14.8

Ans. **(3)**

9. The density of a solution prepared by dissolving 120 g of urea (mol. mass = 60 u) in 1000 g of water is 1.15 g/mL. The molarity of this solution is :-

(1) 2.05 M (2) 0.50 M (3) 1.78 M (4) 1.02 M

Ans. **(1)**

DPP-3

1. 4 g of hydrogen reacts with 20 g of oxygen to form water. The mass of water formed is

(1) 24 g (2) 36 g (3) 22.5 g (4) 40 g

Ans. **(3)**

2. In the reaction,

$2SO_2 + O_2 \rightarrow 2SO_3$

when 1 mole of SO_2 and 1 mole of O_2 are made to react to completion

(1) All the oxygen will be consumed (2) 1.0 mole of SO_3 will be produced
(3) 0.5 mole ofd SO_2 is remained (4) All of these

Ans. **(2)**

3. Consider the following reaction sequence :

$S_8(s) + 8O_2(g) \rightarrow 8SO_2(g)$

$2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$

How many grams of SO_3 are produced from 1 mole S_8 ?

(1) 1280 g (2) 960 g (3) 640 g (4) 320 g

Ans. **(3)**

4. One litre of CO_2 is passed over hot coke. The volume becomes 1.4 litre. The composition of products is–

(1) 0.6 litre CO (2) 0.8 litre CO_2

(3) 0.6 litre CO_2 and 0.8 litre CO (4) None

Ans. **(3)**

5. The number of litres of air required to burn 8 litres of C_2H_2 is approximately-

(1) 40 (2) 60 (3) 80 (4) 100

Ans. **(4)**

6. 4 gms. of hydrogen are ignited with 4 gms of oxygen. The weight of water formed is -

(1) 0.5 gm (2) 3.5 gm (3) 4.5 gm (4) 2.5 gm

Ans. **(3)**

7. For the reaction $2P + Q \rightarrow R$, 8 mol of P and excess of Q will produce :

(1) 8 mol of R (2) 5 mol of R (3) 4 mol of R (4) 13 mol of R

Ans. **(3)**

8. In a certain operation 358 g of $TiCl_4$ is reacted with 96 g of Mg. Calculate % yield of Ti if 32 g of Ti is actually obtained

[At. wt. Ti = 48, Mg = 24] [Hint : $\frac{358}{190} = 1.88$]

(1) 35.38 % (2) 66.6 % (3) 100 % (4) 60 %

Ans. **(1)**

9. What weights of P_4O_6 and P_4O_{10} will be produced by the combustion of 31g of P_4 in 32g of oxygen leaving no P_4 and O_2.

(1) 2.75g, 219.5g (2) 27.5g, 35.5g (3) 55g, 71g (4) 17.5g, 190.5g

Ans. **(2)**

10. How many mole of $Zn(FeS_2)$ can be made from 2 mole zinc, 3 mole iron and 5 mole sulphur.

(1) 2 mole (2) 3 mole (3) 4 mole (4) 5 mole

Ans. **(1)**

DPP-4

1. If the weight of metal chloride is x gram containing y gram of metal, the equivalent weight of metal will be

(1) $E = \frac{x}{y} \times 35.5$ (2) $E = \frac{8(y-x)}{x}$ (3) $E = \frac{y}{(x-y)} \times 35.5$ (4) $E = \frac{8(x-y)}{y}$

Ans. **(3)**

2. 0.5 gm of a base was completely neutralised by 100 ml. of 0.2 N acid. Equivalent weight of the base is -

(1) 50 (2) 100 (3) 25 (4) 125

Ans. **(3)**

3. 1.0 gm of a metal combines with 8.89 gms of Bromine. Equivalent weight of metal is nearly : (at.wt. of Br = 80)

(1) 8 (2) 9 (3) 10 (4) 7

Ans. **(2)**

4. 0.84 gms. of metal hydride contains 0.04 gms of hydrogen. The equivalent wt. of metal is .....

(1) 80 (2) 40 (3) 20 (4) 60

Ans. **(3)**

5. The weights of two elements which combine with one another are in the ratio of their :–

(1) At wt. (2) Mol. wt. (3) Eq. wt. (4) None

Ans. **(3)**

6. The oxide of a metal has 32% oxygen. It's equivalent weight would be:-

(1) 34 (2) 32 (3) 17 (4) 16

Ans. **(3)**

7. Specific heat of a solid element is 0.1Cal/gm °C and its equivalent weight is 31.8. Its exact atomic weight is -

(1) 31.8 (2) 63.6 (3) 318 (4) 95.4

Ans. **(2)**

8. Relative density of a volatile substance with respect to CH_4 is 4 (CH_4 = 1). Its molecular weight would be –

(1) 8 (2) 32 (3) 64 (4) 128

Ans. **(3)**

9. 5 litre of gas at STP weighs 6.25 gms. What is its gram molecular weight ?

(1) 1.25 (2) 14 (3) 28 (4) 56

Ans. **(3)**

10. Equivalent weight of bivalent metal is 32.7. Molecular weight of its chloride is :–

(1) 68.2 (2) 103.7 (3) 136.4 (4) 166.3

Ans. **(3)**

11. Under the same conditions, two gases have the same number of molecules. They must

(1) be noble gases (2) have equal volumes

(3) have a volume of 22.4 dm^3 each (4) have an equal number of atoms

Ans. **(2)**

12. 3g of a hydrocarbon on combustion in excess of oxygen produces 8.8 g of CO_2 and 5.4 g of H_2O. The data illustrates the law of :

(1) conservation of mass (2) multiple proportions

(3) constant proportions (4) none of these

Ans. **(1)**