

ARJUNA-NEET (Chemistry)

PRACTICE TEST-01

46. How many significant figures are there in 4000?
 (A) 1 (B) 4
 (C) 2 (D) 0
47. Which of the following is Heterogeneous mixture?
 (A) Rasna Juice (B) Sand + Fe
 (C) Lemon juice (D) Humidity
48. What is Empirical formula of Glucose
 (A) CH_2O (B) $\text{C}_6\text{H}_{12}\text{O}_6$
 (C) $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ (D) None of these
49. $1 \text{ pm} = \underline{\hspace{1cm}} \text{ mm}$
 (A) 10^{-1} (B) 10^{-9}
 (C) 10^{-3} (D) 10^{-6}
50. Which of the following pairs of compound illustrate how of multiple proportions?
 (A) KOH, CsOH (B) H_2O , D_2O
 (C) C_2H_6 , C_6H_6 (D) KCl, KBr
51. When 200 gm of Limestone is strongly heated, it undergoes thermal decomposition to form 112 g of lime an unknown mass of carbon dioxide gas as $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$, what will be the mass of CO_2 formed?
 $\begin{matrix} 200 \text{ g} & & 112 \text{ gm} \end{matrix}$
 (A) 88 g (B) 24 g
 (C) 64 g (D) 40 g
52. What is the n-factor (Basicity) of orthoboric acid (H_3BO_3)?
 (A) 3 (B) 1
 (C) 2 (D) 0
53. 32 gm of metal reacts with 48 gm O_2 . Find equivalent mass of metal?
 (A) 5.3 (B) 3.5
 (C) 4.2 (D) 2.8
54. 1 amu is equals to
 (A) 6.02×10^{23}
 (B) $\frac{1}{N_A}$ ($N_A = 6.02 \times 10^{23}$)
 (C) $1.66 \times 10^{-24} \text{ g}$
 (D) Both (C) and (D)
55. Molality is expressed in units of
 (A) mol kg^{-1} (B) mol L^{-1}
 (C) $\text{mol L}^{-1} \text{ S}^{-1}$ (D) $\text{mol}^1 \text{ g}^{-1} \text{ S}^{-1}$
56. A solution is prepared by dissolving 1.0 g of NaOH in water to get 250 ml of solution calculate its molarity.
 (A) 2.5 (B) 4.5
 (C) 5.0 (D) 0.1
57. 50 g of magnesium carbonate (MgCO_3) sample decomposes on heating to give magnesium oxide (MgO) and 11 g of carbon dioxide (CO_2). Percentage purity of MgCO_3 in the sample is
 (A) 42% (B) 25%
 (C) 30% (D) 58%
58. A concentrated aqueous solution is 98% H_2SO_4 by mass and density 1.8 g/ml. The volume of this acid required to make 500 ml of 0.2 M H_2SO_4 solution is
 (A) 11.55 ml (B) 55.5 ml
 (C) 25.5 ml (D) 5.55 ml
59. In the reaction, $2\text{NaOH} + \text{H}_3\text{PO}_3 \rightarrow \text{Na}_2\text{HPO}_3 + 2\text{H}_2\text{O}$, the equivalent mass of H_3PO_3 is (M : Molar mass of H_3PO_3)

- (A) M (B) $\frac{M}{3}$
 (C) $\frac{M}{2}$ (D) $\frac{2M}{3}$
60. Total number of atoms present in 11.2 ml of CO_2 (g) at STP is
 (A) $1.5 N_A$ (B) $1.5 \times 10^{-5} N_A$
 (C) $1.5 \times 10^{-3} N_A$ (D) $150 N_A$
61. In which mode of expression, the concentration of a solution depends on temperature?
 (A) Normality
 (B) Molarity
 (C) Volume strength
 (D) All of these
62. Maximum number of atoms is present in
 (A) 48 g O atom (B) 48 g O_2
 (C) 48 g O_3 (D) 5 mole of O_2
63. The number of significant figures in 3.35×10^{-18} is
 (A) Three (B) One
 (C) Four (D) Two
64. Mass of Mg required to produce 11.2 l of H_2 gas at STP on reaction with dilute HCl will be
 (A) 6 g (B) 18 g
 (C) 12 g (D) 24 g
65. Which of the following pair of species illustrates law of multiple proportions?
 (A) O_2, O_3 (B) $\text{H}_2\text{O}, \text{D}_2\text{O}$
 (C) $\text{CH}_4, \text{C}_2\text{H}_6$ (D) KOH, KCl
66. Mole fraction of NaOH in its aqueous solution having its molality 2 is
 (A) 0.015 (B) 0.035
 (C) 0.028 (D) 0.045
67. An element(A) has the following isotopic composition, $^{100}\text{A} : 40\%$, $^{102}\text{A} : 60\%$. The weighted average atomic mass of the naturally occurring element A is nearly equal to
 (A) 100.9 (B) 101.4
 (C) 101.7 (D) 101.2
68. A gaseous mixture contains equal mass of oxygen and hydrogen. The ratio of their molecules is
 (A) 1 : 4 (B) 1 : 16
 (C) 1 : 2 (D) 1 : 32
69. 200 g of impure sample of KClO_3 on heating gives 48 g of O_2 .

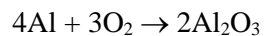
$$2\text{KClO}_3 \xrightarrow{\Delta} 2\text{KCl} + 3\text{O}_2$$
 The percentage purity of KClO_3 is (Molar mass of $\text{KClO}_3 = 122.5 \text{ g mol}^{-1}$)
 (A) 80.5% (B) 61.25%
 (C) 75% (D) 68.2%
70. Number of g-atom of Na present in 2.3 kg of Na is (Atomic mass Na = 23 u)
 (A) 50 (B) 25
 (C) 200 (D) 100
71. Mass of one molecule of H_2S in (Atomic mass of sulphur = 32 u)
 (A) 34 g (B) 34 mg
 (C) $\frac{34}{N_A}$ g (D) $\frac{N_A}{34}$ g
72. 12 g of magnesium is reacted with excess of hydrochloric acid (HCl). The volume of H_2 gas liberated at STP is (Atomic mass of Mg = 24 u)
 (A) 5.6 L (B) 11.2 L
 (C) 22.4 L (D) 44.8 L
73. If equal mass of H_2 and O_2 is present in a closed vessel then the ratio of their moles is
 (A) 8 : 1 (B) 4 : 1
 (C) 16 : 1 (D) 12 : 1



74. Number of carbon atoms present in 50 g of CaCO_3 is (Molar mass of $\text{CaCO}_3 = 100 \text{ g mol}^{-1}$)
 (A) $0.5 N_A$ (B) $5 N_A$
 (C) $4 N_A$ (D) $1.5 N_A$
75. Consider the following hypothetical reaction
 $2A + 4B \rightarrow C$
 If 8 mole of A is reacted with 12 mole of B then maximum moles of C formed will be
 (A) 4 (B) 6
 (C) 3 (D) 2
76. 3.01×10^{23} molecules of urea is present in 250 ml aqueous solution. Molarity of urea in the solution is ($N_A = 6.02 \times 10^{23}$)
 (A) 2 M (B) 1 M
 (C) 3 M (D) 4 M
77. Number of electrons present in 12 g of carbon is
 (A) N_A (B) $2N_A$
 (C) $4N_A$ (D) $6N_A$
78. If molarity of 100 ml aqueous solution of glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) is 1.5 M, then the number of carbon atoms present in the solution is
 (A) $1.5 N_A$ (B) $0.15 N_A$
 (C) $0.9 N_A$ (D) $2.5 N_A$
79. If 10 g of metal oxide contains 9 g of metal then the equivalent weight of the metal will be
 (A) 60 g (B) 52 g
 (C) 42 g (D) 72 g
80. If empirical formula of a hydrocarbon is CH_2 and molar mass of the compound is 78 g mol^{-1} then molecular formula of the compound is
 (A) C_3H_6 (B) C_6H_{12}
 (C) C_5H_{10} (D) C_4H_8
81. Equivalent weight of sulphuric acid (H_2SO_4) when it is completely neutralized by NaOH, is
 (A) 49 (B) 98
 (C) 24.5 (D) 52
82. Mass percentage of oxygen in hydrogen peroxide (H_2O_2) is
 (A) 85.2% (B) 94.1%
 (C) 75.7% (D) 89.1%
83. Number of moles is 98 gm H_2SO_4 ?
 (A) 1 (B) 2
 (C) 3 (D) 4
84. Volume occupied by 6.02×10^{24} molecules of CH_4 at STP is
 (A) 22.4 L (B) 112 L
 (C) 180 L (D) 224 L
85. Number of glucose molecules present in 720 u of glucose is (Molecular mass of glucose = 180 u)
 (A) 2 (B) 4
 (C) 6 (D) 8
86. Which among the following contains highest number of atoms?
 (A) 0.5 mole of SO_3
 (B) 0.5 mole of H_2SO_4
 (C) 1 mole of H_2
 (D) 1 mole of SO_2
87. Mass of nitrogen present in 4.6 g of NO_2 is (Atomic mass of N = 14 u and O = 16 u)
 (A) 2.8 g (B) 2.2 g
 (C) 1.8 g (D) 1.4 g
88. Mole of oxygen required to react completely with 90 g of C_2H_6 is
 $2\text{C}_2\text{H}_6 + 7\text{O}_2 \rightarrow 4\text{CO}_2 + 6\text{H}_2\text{O}$
 (A) 7 (B) 8.5
 (C) 10.5 (D) 12



89. 27 g of Al is reacted with 32 g of O_2 . Mole of Al_2O_3 formed according to the following equation is



(Atomic mass of Al = 27 u, O = 16 u)

- (A) $\frac{1}{2}$ (B) $\frac{1}{3}$
(C) 1 (D) $\frac{1}{4}$

90. Number of oxygen atoms present in 224 ml of O_2 at STP is

- (A) $\frac{1}{100} N_A$ (B) $\frac{1}{50} N_A$
(C) $\frac{1}{25} N_A$ (D) $\frac{1}{75} N_A$



ANSWERS KEY

- | | | |
|---------|---------|---------|
| 46. (A) | 61. (D) | 76. (A) |
| 47. (B) | 62. (D) | 77. (D) |
| 48. (A) | 63. (A) | 78. (C) |
| 49. (B) | 64. (C) | 79. (D) |
| 50. (C) | 65. (C) | 80. (B) |
| 51. (A) | 66. (B) | 81. (A) |
| 52. (B) | 67. (D) | 82. (B) |
| 53. (A) | 68. (B) | 83. (A) |
| 54. (D) | 69. (B) | 84. (D) |
| 55. (A) | 70. (D) | 85. (B) |
| 56. (D) | 71. (C) | 86. (B) |
| 57. (A) | 72. (B) | 87. (D) |
| 58. (D) | 73. (C) | 88. (C) |
| 59. (A) | 74. (A) | 89. (A) |
| 60. (C) | 75. (C) | 90. (B) |



HINTS & SOLUTIONS

46. (A)
Zeroes after non zero digits are not significant.

47. (B)
FACT

48. (A)
Molecular Formula of Glucose
→ $C_6H_{12}O_6$
E.F. → simplest formula → CH_2O

49. (B)
 $\Rightarrow \frac{10^{-12}}{10^{-3}} = 10^{-9} \text{ mm}$

50. (C)
Two Elements → Many compounds

51. (A)
Acc. to law of conservation of mass
Total mass of Reactant = Total mass of Product

52. (B)
FACT

53. (A)
 $E_M = \frac{W_M}{W_{O_2}} \times 8 = \frac{32}{48} \times 8 = 5.3$

54. (D)
FACT

55. (A)
 $M = \frac{\eta}{W_A (kg)} \Rightarrow \text{mol kg}^{-1}$

56. (D)
 $M = \frac{\eta_B}{V_{(L)}}$
 $M = \frac{1 \times 1000}{40 \times 250} \Rightarrow \frac{4}{40} \Rightarrow \frac{1}{10} = 0.1M$

57. (A)
 $MgCO_3 \rightarrow MgO + CO_2$
 $\frac{1}{1} \eta MgCO_3 \times \frac{x}{100} = \frac{1}{1} \eta CO_2$
 $\frac{50}{84} \times \frac{x}{100} = \frac{11}{44}$
% Purity → x = 42%

58. (D)
 $M_1 V_1 = M_2 V_2$
 $M_1 = \frac{10 \times d}{M \omega}$
 $V_1 = ?$

59. (A)
 $E_M = \frac{M}{n - \text{factor}}$
 $2NaOH + H_3PO_3 \rightarrow Na_2HPO_3 + 2H_2O$
 $n=2$
n-factor = 2 - 1 = 1
↳ no. of transferable $h + \text{ion}$.

60. (C)
 $\frac{N_o}{N_A} = \frac{V_L}{22.4}$

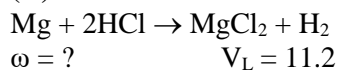
61. (D)

62. (D)
 $A \rightarrow N_o = \frac{43}{16} \times 1 \times N_A = 3N$
 $B \rightarrow N_o = \frac{48}{32} \times N_A \times 2 = 3N_A$
 $C \rightarrow N_o = \frac{48}{48} \times N_A \times 3 = 3N_A$
 $D \rightarrow n = \frac{N_o}{N_A} \quad 5 = \frac{N_o}{N_A}$
 $N_o = 5 \times N_A \times 2 = 10N_A$

63. (A)
FACT



64. (C)



$$\frac{1}{1} nmg = \frac{1}{1} nH_2$$

$$\frac{\omega}{24} = \frac{11.2}{22.4}$$

$$\omega = 12g$$

65. (C)

Two Elements \rightarrow many compounds

66. (B)

$$X_B = \frac{m}{55.55 + m}$$

67. (D)

$$\text{AAM} = \frac{40 \times 100 + 102 \times 60}{100} = 101.2$$

68. (B)

Number of molecules of O_2

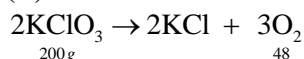
$$= \frac{\omega}{32} \times N_A$$

Number of molecules of H_2

$$= \frac{\omega}{2} \times N_A$$

$$= \frac{2}{32} = 1:16$$

69. (B)



$$\frac{1}{2} n\text{KClO}_3 \times \frac{x}{100} = \frac{1}{3} n_{\text{O}_2}$$

$$\frac{1}{2} \times \frac{200}{122.5} \times \frac{x}{100} = \frac{1}{3} \times \frac{48}{32}$$

$$x = 61.25 \%$$

70. (D)

g-atom \Rightarrow mole

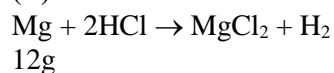
$$n = \frac{\omega}{A.M.} = \frac{2.3 \times 1000}{23} = 100$$

71. (C)

$$\frac{N_O}{N_A} = \frac{\omega}{MM}$$

$$\omega = \frac{1}{N_A} \times 34g$$

72. (B)



$$\frac{1}{1} nMg = \frac{1}{1} nH_2$$

$$\frac{12}{24} = \frac{V_L}{22.4}$$

$$V = 11.2L$$

73. (C)

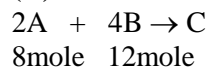
$$\frac{n_{H_2}}{n_{O_2}} = \frac{\frac{\omega}{2}}{\frac{\omega}{32}} = \frac{32}{2} \Rightarrow 16:1$$

74. (A)

$$\frac{N_O}{N_A} = \frac{\omega}{MM}$$

$$N_O = \frac{50}{100} \times N_A \times 1 \Rightarrow 0.5 N_A$$

75. (C)



$$\frac{1}{2} n_A \quad \frac{1}{4} n_B$$

$$\frac{1}{2} \times 8 \quad \frac{1}{4} \times 12$$

$$+ 4 \quad 3 = \frac{1}{1} n_C$$

$$\downarrow$$

$$\text{LoRo}$$

$$n_C = 3$$

76. (A)

$$M = \frac{n_B}{V_{(L)}}$$

$$n_B = \frac{N_O}{N_A}$$

77. (D)

$$\frac{N_O}{N_A} = \frac{\omega}{A.M_O}$$



$$N_O = \frac{12}{12} \times N_A \times 6 \Rightarrow 6N_A$$

78. (C)

$$M = \frac{n_B}{V_{(L)}}$$

$$n_{C_6H_{12}O_6} = M \times V_{(L)}$$

$$n = \frac{N_O}{N_A}$$

79. (D)

$$E_M = \frac{\omega_M}{\omega_{O_2}} \times 8$$

$$= \frac{9}{1} \times 8 = 72g$$

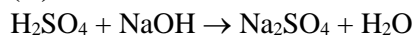
$$\omega_M + \omega_{O_2} = \omega_{MO}$$

80. (B)

$$n = \frac{\text{Molecular Formula weight}}{\text{Empirical Formula weight}}$$

$$\text{M.F.} = n \times \text{E.F.}$$

81. (A)



$$E_M = \frac{MM_{H_2SO_4}}{n - f} = \frac{98}{2} = 49$$

82. (B)

$$\% O = \frac{\text{At mass of O} \times x \times 100}{\text{M. cut of } H_2O_2}$$

83. (A)

$$n_{H_2SO_4} = \frac{\omega}{MM} = \frac{98}{98} = 1$$

84. (D)

$$\frac{V_L}{22.4} = \frac{N_O}{N_A}$$

$$V_L = \frac{6.02 \times 10^{24}}{6.02 \times 10^{23}} \times 22.4 = 224 \text{ L}$$

85. (B)

$$\frac{N_O}{N_A} = \frac{\omega}{MM}$$

86. (B)

$$n = \frac{N_O}{N_A}$$

87. (D)

$$\% N = \frac{14}{46} \times 1 \times 100 \quad \dots(1)$$

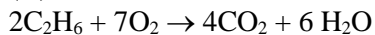
$$\% N = \frac{\omega_M}{\omega_{NO_2}} \times 100 \quad \dots(2)$$

$$(1) = (2)$$

$$\frac{14}{46} \times 100 = \frac{\omega_N}{4.6} \times 100$$

$$= 1.4 \text{ g}$$

88. (C)

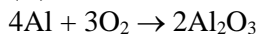


$$\frac{1}{2} n_{C_2H_6} = \frac{1}{7} n_{O_2}$$

$$\frac{90}{30} = \frac{1}{7} n_{O_2}$$

$$n_{O_2} = 10.5$$

89. (A)



$$\frac{1}{4} \times \frac{27}{27} = \frac{32}{16}$$

$$\text{L.O. R.} \quad \frac{1}{4} = \frac{1}{2} n_{Al_2O_3} \Rightarrow \frac{1}{2}$$

90. (B)

$$\frac{N_O}{N_A} = \frac{V}{22.4}$$

$$N_O = \frac{224 \times N_A \times 10 \times 2}{22.4 \times 1000} = \frac{N_A}{50}$$





***Note* - If you have any query/issue**

Mail us at support@physicswallah.org



support@physicswallah.org