

Some Basic Concepts of chemistry

Set 2

Q51. Which law explains the formation of CO and CO₂ from C and O₂?

- a) Law of conservation of mass
- b) Law of multiple proportions
- c) Law of constant proportion
- d) Avogadro's law

Answer: b) Law of multiple proportions

Q52. Which of the following is an extensive property?

- a) Density
- b) Temperature
- c) Pressure
- d) Mass

Answer: d) Mass

Q53. Which of the following is an intensive property?

- a) Volume
- b) Mass
- c) Density
- d) Energy

Answer: c) Density

Q54. The mass of one mole of electrons is approximately:

- a) 5.5×10^{-4} g
- b) 9.1×10^{-28} g
- c) 1 g
- d) 1.6×10^{-19} g

Answer: a) 5.5×10^{-4} g

Q55. Molarity of pure water is nearly:

- a) 18 M
- b) 55.5 M
- c) 1 M
- d) 100 M

Answer: b) 55.5 M

Q56. Which of the following has highest equivalent mass?

- a) HCl
- b) H₂SO₄

- c) HNO_3
- d) NaOH

Answer: b) H_2SO_4

Q57. Which one of the following is not a SI base unit?

- a) Mole
- b) Kelvin
- c) Litre
- d) Candela

Answer: c) Litre

Q58. The SI unit of pressure is:

- a) Pascal
- b) Dyne cm^{-2}
- c) Bar
- d) Torr

Answer: a) Pascal

Q59. 1 bar is equal to:

- a) 10^5 Pa
- b) 10^6 Pa
- c) 10^4 Pa
- d) 10^3 Pa

Answer: a) 10^5 Pa

Q60. Which of the following gases is diatomic?

- a) O_2
- b) H_2
- c) Cl_2
- d) All of these

Answer: d) All of these

Q61. The empirical formula of C_6H_6 is:

- a) CH
- b) CH_2
- c) C_2H_2
- d) C_3H_3

Answer: a) CH

Q62. The empirical formula of $\text{C}_6\text{H}_{12}\text{O}_6$ is:

- a) CHO
- b) CH_2O
- c) $\text{C}_2\text{H}_4\text{O}_2$

d) CH_3O

Answer: b) CH_2O

Q63. The molecular mass of $\text{C}_6\text{H}_{12}\text{O}_6$ is:

a) 120 g

b) 180 g

c) 160 g

d) 200 g

Answer: b) 180 g

Q64. One mole of electrons is equal to:

a) 1 A

b) 1 Coulomb

c) 96500 Coulomb

d) 6.022×10^{23} Coulomb

Answer: c) 96500 Coulomb

Q65. If molecular formula is a whole number multiple of empirical formula, the multiplier is called:

a) n-factor

b) Molecular ratio

c) Multiplier

d) Formula factor

Answer: d) Formula factor

Q66. 1 mole of photons is called:

a) Joule

b) Einstein

c) Newton

d) Curie

Answer: b) Einstein

Q67. Vapour density is related to molecular mass by:

a) $M = 2 \times \text{Vapour density}$

b) $M = \text{Vapour density}/2$

c) $M = \text{Vapour density} \times \text{Avogadro number}$

d) $M = \text{Vapour density} \times 22.4$

Answer: a) $M = 2 \times \text{Vapour density}$

Q68. The SI unit of molality is:

a) mol/L

b) mol/kg

c) mol/m³

d) mol

Answer: b) mol/kg

Q69. The number of significant figures in 0.00250 is:

a) 2

b) 3

c) 4

d) 5

Answer: b) 3

Q70. The number of significant figures in 1.0050 is:

a) 4

b) 5

c) 3

d) 2

Answer: b) 5

Q71. Molar mass of K_2SO_4 is:

a) 174 g/mol

b) 172 g/mol

c) 176 g/mol

d) 178 g/mol

Answer: a) 174 g/mol

Q72. Moles of NaOH in 40 g are:

a) 0.5 mol

b) 1 mol

c) 2 mol

d) 3 mol

Answer: b) 1 mol

Q73. Mass of 2 moles of CO_2 is:

a) 22 g

b) 44 g

c) 88 g

d) 66 g

Answer: c) 88 g

Q74. Number of moles in 11.2 L of O_2 gas at STP is:

a) 1 mol

b) 0.5 mol

c) 2 mol

d) 1.5 mol

Answer: b) 0.5 mol

Q75. Number of atoms in 0.5 mol of O_2 is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 1.204×10^{24}

d) 2.24×10^{23}

Answer: c) 1.204×10^{24}

Q76. Mass of 0.25 mol of H_2 gas is:

a) 0.5 g

b) 1 g

c) 2 g

d) 4 g

Answer: b) 0.5 g

Q77. Number of atoms in 0.25 mol of C is:

a) 1.505×10^{23}

b) 3.011×10^{23}

c) 6.022×10^{23}

d) 12×10^{23}

Answer: b) 3.011×10^{23}

Q78. Number of molecules in 2 g of H_2 gas is:

a) 6.022×10^{23}

b) 3.011×10^{23}

c) 12.044×10^{23}

d) 1.204×10^{24}

Answer: a) 6.022×10^{23}

Q79. Mass of 0.5 mol of CO_2 is:

a) 22 g

b) 44 g

c) 11 g

d) 33 g

Answer: a) 22 g

Q80. Number of molecules in 0.5 mol of N_2 is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 12.044×10^{23}

d) 1.204×10^{24}

Answer: b) 6.022×10^{23}

Q81. Mass of 3 mol of H_2O is:

a) 18 g

b) 54 g

c) 36 g

d) 72 g

Answer: b) 54 g

Q82. Molar mass of Al_2O_3 is:

a) 101 g/mol

b) 102 g/mol

c) 98 g/mol

d) 105 g/mol

Answer: b) 102 g/mol

Q83. Number of molecules in 5 g of H_2 gas is:

a) 1.505×10^{24}

b) 1.204×10^{24}

c) 3.011×10^{23}

d) 6.022×10^{23}

Answer: a) 1.505×10^{24}

Q84. Number of molecules in 1 g of H_2 gas is:

a) 3.011×10^{23}

b) 6.022×10^{23}

c) 1.505×10^{23}

d) 1.204×10^{23}

Answer: a) 3.011×10^{23}

Q85. Number of atoms in 27 g of Al is:

a) 6.022×10^{23}

b) 12.044×10^{23}

c) 3.011×10^{23}

d) 1.505×10^{23}

Answer: a) 6.022×10^{23}

Q86. Number of moles in 16 g of O_2 is:

a) 0.5 mol

b) 1 mol

c) 2 mol

d) 3 mol

Answer: a) 0.5 mol

Q87. Mass of 1 mol of N_2 gas is:

a) 14 g

b) 28 g

c) 32 g

d) 16 g

Answer: b) 28 g

Q88. Number of atoms in 56 g of Fe is:

a) 1.204×10^{24}

b) 6.022×10^{23}

c) 3.011×10^{23}

d) 12.044×10^{23}

Answer: a) 1.204×10^{24}

Q89. Mass of 0.5 mol of H_2O is:

a) 9 g

b) 18 g

c) 27 g

d) 36 g

Answer: a) 9 g

Q90. Mass of 2 mol of NaCl is:

a) 58.5 g

b) 117 g

c) 29.25 g

d) 116 g

Answer: b) 117 g

Q91. Percentage of carbon in CO_2 is:

a) 12%

b) 24%

c) 27%

d) 33%

Answer: d) 27%

Q92. Percentage of hydrogen in H_2O is:

a) 11.1%

b) 12%

c) 88.9%

d) 22%

Answer: a) 11.1%

Q93. Percentage of N in NH_3 is:

a) 14%

b) 82.4%

c) 17.6%

d) 50%

Answer: b) 82.4%

Q94. Mass of 0.1 mol of CaCO_3 is:

a) 10 g

b) 20 g

c) 50 g

d) 100 g

Answer: c) 10 g

Q95. Volume of 0.5 mol of O_2 gas at STP is:

a) 22.4 L

b) 11.2 L

c) 44.8 L

d) 33.6 L

Answer: b) 11.2 L

Q96. Number of molecules in 22 g of CO_2 is:

a) 6.022×10^{23}

b) 3.011×10^{23}

c) 1.204×10^{24}

d) 2.24×10^{23}

Answer: b) 3.011×10^{23}

Q97. Percentage of O in H_2O is:

a) 88.9%

b) 11.1%

c) 50%

d) 44.4%

Answer: a) 88.9%

Q98. Number of molecules in 1 L of gas at STP is:

a) 2.69×10^{22}

b) 6.022×10^{23}

c) 3.011×10^{23}

d) 1.204×10^{23}

Answer: a) 2.69×10^{22}

Q99. Empirical formula of C_2H_4 is:

a) CH_2

b) C_2H_4

c) C_4H_8

d) CH

Answer: a) CH_2

Q100. Empirical formula of C_6H_6 is:

a) CH

b) C_2H_2

c) C_3H_3

d) C_6H_6

Answer: a) CH