QUESTIONS BASED ON MOLES

1. The number of atoms present in 16 g of oxygen is
(1) $6.02\times10^{11.5}$ (2) 3.01×10^{23} (3) $3.01\times10^{11.5}$ (4) 6.02×10^{23}

2. Number of atoms in 4.25 g of NH_3 is approx :-
(1) 1×10^{23} (2) 1.5×10^{23} (3) 2×10^{23} (4) 6×10^{23}

3. Which of the following contains maximum number of oxygen atoms?
(1) 1 g of O (2) 1 g of O_2
(3) 1 g of O_3 (4) All have the same number of atoms

4. The number of atoms present in 0.5 g atom of nitrogen is same as the atoms in-
(1) 12 g of C (2) 16 g of O_2 (3) 8 g of oxygen (4) 24 g of Mg

5. Which of the following contains maximum number of atoms?
(1) 4 g of H_2 (2) 16 g of O_2 (3) 28 g of N_2 (4) 18 g of H_2O

6. Number of neutrons present in 1.7 g of ammonia is-
(1) N_A (2) $N_A/10\times4$ (3) $(N_A/10)\times7$ (4) $N_A\times10\times7$

7. 5.6 L of oxygen at STP contains-
(1) 6.02×10^{23} atoms (2) 3.01×10^{23} atoms
(3) 1.505×10^{23} atoms (4) 0.7525×10^{23} atoms

8. Number of oxygen atoms in 8 g of ozone is -
(1) 6.02×10^{23} (2) $\frac{6.02\times10^{23}}{2}$
(3) $\frac{6.02\times10^{23}}{3}$ (4) $\frac{6.02\times10^{23}}{6}$

9. The number of atoms in "n" mole of gas can be given by :-
(1) n×Av. No.×atomicity (2) $\frac{n\times Av.No.}{Atomicity}$
(3) $\frac{Av.No.\times Atomicity}{n}$ (4) None

10. Sum of number of protons, electrons and neutrons in 12 g of $^{12}_{6}C$ is :-
(1) 1.8 (2) 12.044×10^{23} (3) 1.084×10^{25} (4) 10.84×10^{23}

11. The weight of one atom of Uranium is 238 amu. Its actual weight is…..g.
(1) 1.43×10^{26} (2) 3.94×10^{-22} (3) 6.99×10^{-23} (4) 1.53×10^{-22}

12. The actual weight of a molecule of water is-
(1) 18 g (2) 2.99×10^{-23} g

(3) Both (1) & (2) are correct (4) 1.66×10^{-24} g

13. What is the mass of a molecule of CH_4 :-
(1) 16 g (2) 26.6×10^{22} g (3) 2.66×10^{-23} g (4) 16 N_A g

14. Which of the following has the highest mass?
(1) 1 g atom of C (2) 1/2 mole of CH_4
(3) 10 mL of water (4) 3.011×10^{23} atoms of oxygen

15. Which of the following contains the least number of molecules ?
(1) 4.4 g CO_2 (2) 3.4 g NH_3 (3) 1.6 g CH_4 (4) 3.2 g SO_2

16. The number of molecule in 4.25 g of NH_3 is-
(1) 1.505×10^{23} (2) 3.01×10^{23} (3) 6.02×10^{23} (4) None of these

17. Elements A and B form two compounds B_2A_3 and B_2A. 0.05 moles of B_2A_3 weight 9.0 g and 0.70 mole B_2A weight 10g atomic weight of A and B are-
(1) 20 and 30 (2) 30 and 40 (3) 40 and 30 (4) 30 and 20

18. 5.6 L of oxygen at NTP us equivalent to -
(1) 1 mole (2) 1/2 mole (3) 1/4 mole (4) 1/8 mole

19. 4.4 g of an unknown gas occupies 2.24 L of volume at STP. The gas may be :-
(1) N_2O (2) CO (3) CO_2 (4) 1 & 3 both

20. Which contains least number of molecules:-
(1) 1 g CO_2 (2) 1 gN_2 (3) 1 g O_2 (4) 1 g H_2

21. If V mL of the vapours of substance at NTP weight W g. then molecular weight of substance is:-
(1) (W/V)×22400 (2) $\frac{V}{W}\times22.4$
(3) (W-V)×22400 (4) $\frac{W\times1}{V\times22400}$

22. If 3.01×10^{20} molecules are removed from 98 mg of H_2SO_4, then the number of moles of H_2SO_4 left are :-
(1) 0.1×10^{-3} (2) 0.5×10^{-3} (3) 1.66×10^{-3} (4) 9.95×10^{2}

23. 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

24. Vapour density of gas is 11.2. Volume occupied by 2.4 g of this at STP will be -
(1) 11.2 L (2) 2.24 L (3) 22.4 L (4) 2.4 L

25. The volume of a gas in discharge tube is 1.12×10^{-7} mL at STP. Then the number of molecule of gas in the tube is-
(1) 3.01×10^{4} (2) 3.01×10^{15} (3) 3.01×10^{12} (4) 3.01×10^{16}

26. A person adds 1.71 gram of sugar ($C_{132}H_{22}O_{11}$) in order to sweeten his tea. The number of carbon atoms added are (mol. mass of sugar = 342)
(1) 3.6×10^{22} (2) 7.2×10^{21} (3) 0.05 (4) 6.6×10^{22}

27. The total number of ions present in 1 mL of 0.1 M barium nitrate $Ba(NO_3)_2$ solution is -
(1) 6.02×10^{18} (2) 6.02×10^{19} (3) $3.0\times6.02\times10^{19}$ (4) $3.0\times6.02\times10^{18}$

28. The weight of 1 mole of a gas o density 0.1784 gL^{-1} at NTP is -
(1) 0.1784 g (2) 1 g (3) 4 g (4) 4 amu

29. Given that one mole of N_2 at NTP occupies 22.4 litre the density of N_2 is-
(1) 1.25 g L^{-1} (2) 0.80 g L^{-1} (3) 2.5 g L^{-1} (4) 1.60 g L^{-1}

30. The number of gram molecules of oxygen in 6.02×10^{24} CO molecules is-
(1) 10 g molecules (2) 5 g molecules (3) 1 g molecules (4) 0.5 g molecules

QUESTIONS BASED ON PERCENTAGE, EMPIRICAL FORMULA & MOLECULAR FORMULA

31. A compound of X and Y has equal mass of them. If their atomic weights are 30 and 20 respectively. Molecular formula of that compound :
(1) X_2Y_2 (2) X_3Y_3 (3) X_2Y_3 (4) X_3Y_2

32. An oxide of sulphur contains 50% of sulphur in it. Its emperial formula is-
(1) SO_2 (2) SO_3 (3) SO (4) S_2O

33. A hydrocarbon contains 80% of carbon, then the hydrocarbon is -
(1) CH_4 (2) C_2H_4 (3) C_2H_6 (4) C_2H_2

34. Empeical formula of glucose is-
(1) $C_6H_{12}O_6$ (2) $C_3H_6O_3$ (3) $C_2H_4o_2$ (4) CH_2O

35. An oxide of metal M has 40% by mass of oxygen. Metal M has atomic mass of 24. The empirical formula of the oxide
(1) M_2O (2) M_2O_3 (3) MO (4) M_3O_4

36. A compound contains 38.8 % C,, 16% H and 45.2%N. The formula of the compound would be
(1) CH_3NH_2 (2) CH_3CN (3) C_2H_5CN (4) $CH_2(NH)_2$

37. The simples formula of a compound containing 50% of element X (at wt. = 10) and 50% of element Y(at wt. = 20) is:-
(1) XY (2) X_2Y (3) XY_2 (4) X_3Y

38. Which of the following compounds has same empirical formula as that of glucose :
(1) CH_3CHO (2) CH_3COOH (3) CH_3OH (4) C_2H_6

39. A gas is found to contain 2.34 g of Nitrogen and 5.34 g of oxygen. Simplest formula of the compound is:-
(1) N_2O (2) NO (3) N_2O_3 (4) NO_2

40. 2.2 g of a compound of phosphorous and sulphur has 1.24 g of 'P' in it. Its emperial formula is-
(1) P_2S_3 (2) P_2S_2 (3) P_3S_4 (4) p_4S_3

41. On analysis, a certain compound was found to contain iodine and oxygen in the ratio of 254:80. The formula of the compound is :-
(At mass I = 127, O = 16)
(1) IO (2) I_2O (3) I_5O_2 (4) I_2O_5

42. 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) CrO_5

43. Insulin contains 3.4 % sulphur ; the minimum molecular weight of insulin is :
(1) 941.176 (2) 944 (3) 945.27 (4) None

44. A giant molecule contains 0.25 % of a metal whose atomic weight is 59. Its molecule contains one atom of that metal. Its minimum molecular weight is-
(1) 5900 (2) 23600 (3) 11800 (4) $\frac{100\times59}{0.4}$

45. Caffine has a molecular weight of 194. It contains 28.9% by mass of nitrogen Number of atoms of nitrogen in one molecule of it
(1) 2 (2) 3 (3) 4 (4) 5

QUESTIONS BASED ON STOICHIOMETRY

46. In a gaseous reaction of the type
$aA + bB \longrightarrow cC + dD$,
which statement is wrong ?
(1) a litre of A combines with b litre of B to give C and D
(2) a mole of A combines with b moles of B to give C and D
(3) a g of A combines with b g of B to give C and D
(4) a molecules of A combines with b molecules of B to give C and D

47. Assuming that petrol is octane (C_8H_{18}) and has density 0.8 g mL^{-1}, 1.425 litre of petrol on complete combustion will consume.
(1) 50 mole of O_2 (2) 100 mole of O_2 (3) 125 mole of O_2 (4) 200 mole of O_2

48. 9 g of Al will react, with
$2Al + \frac{3}{2}O_2 \rightarrow Al_2O_3$
(1) 6 g O_2 (2) 8 g O_2 (3) 9 g O_2 (4) 4 g O_2

49. The equation :

$2Al_{(s)} + \frac{3}{2}O_2(g) \rightarrow Al_2O_{3(s)}$ shows that :

(1) 2 mole of Al reacts with $\frac{3}{2}$ mole of O_2 to produce $\frac{7}{2}$ mole of Al_2O_3

(2) 2 g of Al reacts with $\frac{3}{2}$ g of O_2 to produce one mole of Al_2O_3

(3) 2 g of Al reacts with $\frac{3}{2}$ litre of O_2 to produce 1 mole of Al_2O_3

(4) 2 mole of Al reacts with $\frac{3}{2}$ mole of O_2 to produce 1 mole of Al_2O_3

50. 1L of CO_2 is passed over hot coke. When the volume of reaction mixture becomes 1.4 L, the composition of reaction mixture is-
(1) 0.6 L CO (2) 0.8 L CO_2
(3) 0.6 L CO_2 and 0.8 L CO (4) None

51. 26 cc of CO_2 are passed over red hot coke. The volume of CO evolved is :-
(1) 15 cc (2) 10 cc (3) 32 cc (4) 52 cc

52. If 1/2 moles of oxygen combine with Aluminum to form Al_2O_3 then weight of Aluminum metal used in the reaction is (Al = 27)-
(1) 27 g (2) 18 g (3) 54 g (4) 40.5 g

53. 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

54. If 0.25 mole of $BaCl_2$ is mixed with 0.2 mole of Na_3PO_4 the maximum number of moles of $Ba_3(PO_4)_2$ than can be formed is:-
(1) 0.7 (2) 0.5 (3) 0.3 (4) 0.1

55. If 8 mL of uncombined O_2 remain after exploding O_2 with 4 mL of hydrogen, the number f mL of O_2 originally were:-
(1) 12 (2) 2 (3) 10 (4) 4

56. 4 g of hydrogen are ignited with 4g of oxygen. The weight of water formed is-
(1) 0.5 g (2) 3.5 g (3) 4.5 g (4) 2.5 g

57. For the reaction $A + 2B \longrightarrow C$, 5 mole of A and 8 mole of B will produce
(1) 5 mole of C (2) 4 mole of C (3) 8 mole of C (4) 13 mole of C

58. Of 1.6 g of SO_2 and 1.5×10^{22} molecules of H_2S are mixed and allowed to remain in contact in a closed vessel until the reaction
$2H_2S + SO_2 \longrightarrow 3S + 2H_2O$,
produce to completion. Which of the following statement is true?
(1) Only 'S' and 'H_2O' remain in the reaction vessel.
(2) 'H_2S' will remain in excess
(3) 'SO_2' will remain in excess

(4) None

59. 12 L of H_2 and 11.2 L of Cl_2 are mixed and exploded. The composition by volume of mixture is-

(1) 24 L of HCl (g) (2) 0.8 L Cl_2 and 20.8 L HCl (g)

(3) 0.8 L H_2 and 22.4 L HCl (g) (4) 22.4 L HCl (g)

60. 10 mL of gaseous hydrocarbon on combustion give 40 mL of CO_2(g) and 50 mL of H_2O (vap.). The hydrocarbon is -

(1) C_4H_5 (2) C_8H_{10} (3) C_4H_8 (4) C_4H_{10}

61. 500 mL of a gaseous hydrocarbon when burnt in excess of O_2 gave 2.5 L of CO_2 and 3.0 L of water vapours under same conditions. Molecular formula of the hydrocarbon is -

(1) C_4H_8 (2) C_4H_{10} (3) C_5H_{10} (4) C_5H_{12}

QUESTIONS BASED ON EQUIVALENT WEIGHT

62. Molecular weight of tribasic acid is W. Its equivalent weight will be:

(1) $\frac{W}{2}$ (2) $\frac{W}{3}$ (3) W (4) 3W

63. A, E M and n are the atomic weight , equivalent weight, molecular weight and valency of an element. The correct relation is :-

(1) A = E×n (2) A = $\frac{M}{E}$ (3) A = $\frac{M}{n}$ (4) M = A×n

64. Sulphur forms two chlorides S_2Cl_2 and SCl_2., the equivalent mass of sulphur SCl_2 is 16. The equivalent weight of sulphur in S_2Cl_2 is

(1) 8 (2) 16 (3) 32 (4) 64

65. If equivalent weight of S in SO_2 in 8 then equivalent weight of S in SO_3 is-

(1) $\frac{8\times 2}{3}$ (2) $\frac{8\times 3}{2}$ (3) 8×2×3 (4) $\frac{2\times 3}{8}$

66. Which property of an element is not variable:

(1) Valency (2) Atomic weight

(3) Equivalent weight (4) None

67. One g equivalent of a substance is present in-

(1) 0.25 mole O_2 (2) 0.5 mole O_2

(3) 1.00 mole O_2 (4) 8.00 mole O_2

68. In a compound AxBy

(1) Mole of A = mole of B = mole Ax By

(2) eq of A = eq of B = eq. of Ax By

(3) yx mole of A = yx mole of B = (x + y)×mole ofr AxBy

(4) y × mole of A y × mole of B

69. 0.45 g of acid (molecular wt. = 90) was exactly neutralized by 20 mL of 0.5 N NaoH. Basicity the acid is-
(1) 1 (2) 2 (3) 3 (4) 4

70. 0.5 g of base was completely neutralized by 100 mL of 0.2 N acid. Equivalent weight of the base is
(1) 50 (2) 100 (3) 25 (4) 125

71. 0.126 g of an acid requires 20 mL of 0.1 N NaOH for complete neutralization. Equivalent weight of the acid is -
(1) 45 (2) 53 (3) 40 (4) 63

72. 2 g of a base whose equivalent weight is 40 reacts with 3g of an acid. The equivalent weight of the acid is:
(1) 40 (2) 60 (3) 10 (4) 80

73. Equivalent weight of a divalent metal is 2 4. The volume of hydrogen liberated at STP by 12 g of the same metal when added to excess of and acid solution is -
(1) 2.8 litres (2) 5.6 litres (3) 11.2 litres (4) 22.4 litres

74. 0.84 g of metal carbonate react's exactly with 40 mL of N/2 H_2SO_4. The equivalent weight of the metal carbonate is-
(1) 84 (2) 64 (3) 42 (4) 32

75. 1.0 g of a metal combines with 8.89 g of Bromine. Equivalent weight of metal is nearly:
(at. wt. of Br =80)
(1) 8 (2) 9 (3) 10 (4) 7

76. H_3PO_4 is a tribasic acid and one of its salt is NaH_2PO_4 What volume of 1 M NaOH solution should be added to 2 g NaH_2PO_4 to convert is into Na_3PO_4? (at. wt of P = 31)
(1) 100 mL (2) 200 mL (3) 80 mL (4) 300 mL

77. 0.84 g of metal hydride contains 0.04 g of hydrogen. The equivalent wt. of metals is…..
(1) 80 (2) 40 (3) 20 (4) 60

78. A_1 g of an element give A_2 g of its oxide. The equivalent mass of the element is -
(1) $\frac{A_2 - A_1}{A_1} \times 8$ (2) $\frac{A_2 - A_1}{A_2} \times 8$
(3) $\frac{A_1}{A_2 - A_1} \times 8$ (4) $(A_2 - A_1) \times 8$

79. When an element forms an oxide in which oxygen is 20% of the oxide by mass. The equivalent mass of the element will be-
(1) 32 (2) 40 (3) 60 (4) 128

80. If 1.2 g of a metal displaces 1.12 litre of hydrogen at NTP, equivalent mass of the metal would be-
(1) 1.2×11.2 (2) 12 (3) 24 (4) 1.2 + 11.2

81. One g of hydrogen is found to combine with 80 g o bromine. One g of calcium (valency = 2) combines with 4 g of bromine. The equivalent weight o f calcium is-
(1) 10 (2) 20 (3) 40 (4) 80

82. 2.8 g of irom displaces 3.2 g of copper from a solution of copper sulphate solution. If the equivalent mass of iron is 28, then equivalent mass of copper will be-
(1) 16 (2) 32 (3) 48 (4) 64

83. A metal oxide is reduced by heating it in a stream of hydrogen. It is found that after complete reduction 3.15 g of the oxide have yielded 1.05 g of the metal. We may conclude that.
(1) Atomic weight of the metal is 4 (2) Equivalent weight of the metal is 8
(3) Equivalent weight of the metal is 4 (4) Atomic weight of the metal is 8

84. If m_1 g of a metal A displaces m_2 g of another metal B from its salt solution and if their equivalent weight are E_2 and E_1 respectively then the equivalent weight of A can be expressed by :-
(1) $\frac{m_1}{m_2}\times E_2$ (2) $\frac{m_2}{m_1}\times E_2$ (3) $\frac{m_1}{m_2}\times E_1$ (4) $\frac{m_2}{m_1}\times E_1$

85. 14 g of element X combines with 16 g of oxygen. On the basis of this information, which of the following is a correct statement :-
(1) The element X could have an atomic wt. of 7 and its oxide is XO
(2) the element X could have an atomic weight of 14 and its oxide is X_2O
(3) The element X could have an atomic weight of 7 and its oxide is X_2O
(4) The element X could have an atomic weight of 14 and its oxide is XO_2

86. If 2.4 g of a metal displace 1.12 litre hydrogen at normal temperature and pressure equivalent weight of metal, would be:-
(1) 12 (2) 24 (3) 1.2×11.2 (4) 1.2 ÷ 11.2

87. 45 g of acid of mol. wt 90 neutralised by 200 mL of 5N caustic potash. The basicity of acid is :-
(1) 1 (2) 2 (3) 3 (4) None

88. The weights of two elements which combine with one another are in the ration oif their :-
(1) Atomic weight (2) Molecular weight
(3) Equivalent weight (4) None

89. The oxide of metal has 32% oxygen. It's equivalent weight would be:-
(1) 34 (2) 32 (3) 17 (4) 16

90. 1.6 g of Ca and 2.60 g of Zn when treated with and acid in excess separately, produced the same amount of hydrogen. If the equivalent weight of Zn is 32.6, what is the equivalent weight of Ca.
(1) 10 (2) 20 (3) 40 (4) 5

91. 74.5 g of a metallic chloride contains 35.5 g of chlorine. The equivalent mass of the metal is-
(1) 19.5 (2) 35.5 (3) 39.0 (4) 78.0

QUESTIONS BASED ON CALCULATION OF ATOMIC WEIGHTS AND MOLEULAR WEIGHTS

92. The equivalent weight of an element is 4. It's chloride has a V.D. 59.25. Then the valency of the element is-
(1) 4 (2) 3 (3) 2 (4) 1

93. Vapour density of metal chloride is 77. Equivalent weight of metal is 3, then its atomic weight will be-
(1) 3 (2) 6 (3) 9 (4) 12

94. Specific heat of a solid element is 0.1 cal g^{-1} °C and its equivalent weight is 31.8. Its exact atomic weight is-
(1) 31.8 (2) 63.6 (3) 318 (4) 95.4

95. The specific heat of and element is 0.214 cal g^{-1} °C. The approximate atomic weight is-
(1) 0.6 (2) 12 (3) 30 (4) 65

96. A metal M forms a sulphate which is isomorphous with $MgSO_4.7H_2O$. If 0.6538 g of metals M displaced 2.16 g of silver from silver nitrate solution, then the atomic weight of the metal M is
(1) 32.61 (2) 56.82 (3) 65.38 (4) 74.58

97. The carbonate o fa metal is isomorphours with $MgCO_3$ and contains 6.091% of carbon. Atomic weight o the metal is nearly.
(1) 48 (2) 68.5 (3) 137 (4) 120

98. 71 g of chlorine combines with a meta giving 111 g of its chloride. The chloride is isomorphous with $MgCl_2.6H_2O$. The atomic mass of the metal is :-
(1) 20 (2) 30 (3) 40 (4) 69

99. The atomic weight of metal (M) is 27 and its equivalent weight is 9, the formula of its chloride will be :-
(1) MCl (2) MCl_2 (3) M_3Cl (4) MCl_3

100. The chloride of a metal contains 71% chlorine by weight and the vapour density of its is 50, the atomic weight of the metal will be:-
(1) 29 (2) 58 (3) 35.5 (4) 71

101. The specific heat of a metal M is 0.25. Its eq.wt. is 12. What is it's correct at wt. :-
(1) 25.6 (2) 36 (3) 24 (4) 12

102. 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

103. Relative density of a volatile substance with respect CH_4 is 4. Its molecular weight would be-
(1) 8 (2) 32 (3) 64 (4) 128

104. Vapour density of a gas is 16. The ratio of specific heat at constant pressure to specific heat at constant volume is 1.4, then its atomic weight is-
(1) 8 (2) 16 (3) 24 (4) 32

105. The weight of substance that displace 22.4 litre air at NTP is:
(1) Mol. wt. (2) At. wt (3) Eq. wt (4) All

106. 0.39 g of a liquid on vapourisation gave 112 mL of vapour at STP. Its molecular weight is-
(1) 39 (2) 18.5 (3) 78 (4) 112

107. In victor Mayer's method 0.2 g of a volatile compound on volatilisation gave 56 mL of vapour at STP. Its molecular weight is-
(1) 40 (2) 60 (3) 80 (4) 120

108. 510 mg of liquid on vapourisation in Victor Mayer's apparaturs displaces 67.2 cc of dry ait (at NTP). The molecular weight of liquid is-
(1) 130 (2) 17 (3) 1700 (4) 170

109. 5 litre of gas at STP weights 6.25 g. What is its gram molecular weight?
(1) 1.25 (2) 14 (3) 28 (4) 56

110. 0.44 g of colourless oxide of nitrogen occupies 224 mL at STP.The compound is-
(1) N_2O (2) NO (3) N_2O_4 (4) NO_2

111. One litre of a certain gas weights 1.16 g at STP. The gas may possibly be-
(1) C_2H_2 (2) CO (3) O_2 (4) NH_3

112. 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

113. The oxide of an element posses the molecular formula M_2O_3. If the equivalent mass of the metal is 9, the molecular mass of the oxide will be-
(1) 27 (2) 75 (3) 102 (4) 18

114. The law of multiple proportion was proposed by:
(1) Lavoisier (2) Dalton (3) Proust (4) Gaylusac

115. Which one of the following pairs of compounds illustrate the law of multiple proportions?
(1) H_2O, Na_2O (2) MgO, Na_2O (3) Na_2O, BaO (4) $SnCl_2$, $SnCl_4$

116. In the reaction $N_2 + 3H_2 \longrightarrow 2NH_3$ ratio by volume of N_2, H_2 and NH_3 is 1 : 3 : 2 . This illustrates law of -
(1) Difinite proportion (2) Multiple proportion
(3) Law of conservation of mass (4) Gaseous volumes

117. Different proportions of oxygen in the various oxides of nitrogen prove the law of -
(1) Equivalent proportion (2) Multiple proportion
(3) Constant proportion (4) Conservation of matter

118. Oxygen combines with two isotopes of carbon ^{12}C and ^{14}C to form two sample of carbon dioxide. The data illustrates-
(1) Law of conservation of mass (2) Law of multiple proportions
(3) Law of gaseous volume (4) None of these

119. The law of conservation of mass holds good for all of the following except-
(1) All chemical reactions (2) Nuclear reactions
(3) Endothermic reactions (4) Exothermic reactions

120. Number of molecules in 100 mL of each of O_2, NH_3 and CO_2 at STP are -
(1) In the order $CO_2 < O_2 < NH_3$ (2) In the order $NH_3 < O_2 < CO_2$
(3) The same (4) $NH_3 = CO_2 < O_2$

121. The empirical formula of an organic compound containing carbon and hydrogen is CH_2. The mass of one litre of this organic gas is exactly equal to that on one litre of N_2 at same temperature and pressure. Therefore, the molecular formula of the organic gas is-
(1) C_2H_4 (2) C_3H_6 (3) C_6H_{12} (4) C_4H_8

122. Four one litre flasks are separately filled with the gases hydrogen, helium oxygen and ozone at same room temperature and pressure. The ratio of total number of atoms of these gases present in the different flasks would be-
(1) 1 : 1 : 1 : 1 (2) 1 : 2 : 2 : 3 (3) 2 : 1 : 2 : 3 (4) 2 : 1 : 3 : 2

123. A container of volume V, contains 0.28 g of N_2 gas. If same volume of and unknown gas under similar condition of temperature and pressure weights, 0.44g, the molecular mass of the gas is -
(1) 22 (2) 44 (3) 66 (4) 88

124. A and B are two identical vessels. A contains 15 g ethane at 1 atm and 298 K. the vessel B contains 75 g of a gas X_2 at same temperature and pressure. The vapour density of X_2 is-
(1) 75 (2) 150 (3) 37.5 (4) 45

125. When 100 g of ethylene polymerizes to polyethylene according to equation
$nCH_2=CH_2 \longrightarrow -(-CH_2-CH_2-)_n-$.the weight of polyethylene produced will be-
(1) $\frac{n}{2}$ g (2) 100 g (3) $\frac{100}{n}$ g (4) 100 n g

126. If law of conservation of mass was to hold true then 20.8 g of $BaCl_2$ on reaction with 9.8 g of H_2SO_4 will produce 7.3 g of HCl and $BaSO_4$ equal to:-
(1) 11.65 g (2) 23.3 g (3) 25.5 g (4) 30.6 g

127. A chemical equation is balanced according to the law of -
(1) Multiple proportions (2) constant proportions
(3) Gaseous volume (4) Conservation of mass

128. Two flasks A & B of equal capacity of volume contain NH_3 and SO_2 gas respectively under similar condition which flask has more number of moles-
(1) A (2) B
(3) Both have same moles (4) None

ANSWER KEY

EXERCISE-I (Conceptual Question)

1.	(4)	**2.**	(4)	**3.**	(4)	**4.**	(3)	**5.**	(1)	**6.**	(3)	**7.**	(2)
8.	(2)	**9.**	(1)	**10.**	(3)	**11.**	(2)	**12.**	(2)	**13.**	(3)	**14.**	(1)
15.	(4)	**16.**	(1)	**17.**	(3)	**18.**	(3)	**19.**	(4)	**20.**	(1)	**21.**	(1)
22.	(2)	**23.**	(3)	**24.**	(4)	**25.**	(3)	**26.**	(1)	**27.**	(3)	**28.**	(3)
29.	(1)	**30.**	(2)	**31.**	(3)	**32.**	(1)	**33.**	(3)	**34.**	(4)	**35.**	(3)
36.	(1)	**37.**	(2)	**38.**	(2)	**39.**	(4)	**40.**	(4)	**41.**	(4)	**42.**	(2)
43.	(1)	**44.**	(2)	**45.**	(3)	**46.**	(3)	**47.**	(3)	**48.**	(2)	**49.**	(4)
50.	(4)	**51.**	(4)	**52.**	(2)	**53.**	(4)	**54.**	(4)	**55.**	(3)	**56.**	(3)
57.	(2)	**58.**	(3)	**59.**	(3)	**60.**	(4)	**61.**	(4)	**62.**	(2)	**63.**	(1)
64.	(3)	**65.**	(1)	**66.**	(2)	**67.**	(1)	**68.**	(2)	**69.**	(2)	**70.**	(3)
71.	(4)	**72.**	(2)	**73.**	(2)	**74.**	(3)	**75.**	(2)	**76.**	(2)	**77.**	(3)
78.	(3)	**79.**	(1)	**80.**	(2)	**81.**	(2)	**82.**	(2)	**83.**	(3)	**84.**	(3)
85.	(3)	**86.**	(2)	**87.**	(2)	**88.**	(3)	**89.**	(3)	**90.**	(2)	**91.**	(3)
92.	(2)	**93.**	(4)	**94.**	(2)	**95.**	(3)	**96.**	(3)	**97.**	(3)	**98.**	(3)
99.	(4)	**100.**	(1)	**101.**	(3)	**102.**	(2)	**103.**	(3)	**104.**	(2)	**105.**	(1)
106.	(3)	**107.**	(3)	**108.**	(4)	**109.**	(3)	**110.**	(1)	**111.**	(1)	**112.**	(3)
113.	(3)	**114.**	(2)	**115.**	(4)	**116.**	(4)	**117.**	(2)	**118.**	(4)	**119.**	(2)
120.	(3)	**121.**	(1)	**122.**	(3)	**123.**	(2)	**124.**	(1)	**125.**	(2)	**126.**	(2)
127.	(4)	**128.**	(3)										