

Chemistry Test

① Number of grams of oxygen in 32.2 g $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ is
(a) 20.8 (b) 2.24 (c) 22.4 (d) 2.08

② The density of 3M solution of sodium chloride is 1.252 g mL^{-1} . The molality of the soln will be : (molar mass of NaCl = 58.5 g mol^{-1})
(a) 2.60m (b) 2.18m (c) 2.79m (d) 3m

③ 3g of an oxide of metal is converted to chloride completely on it yielded 5g of Chloride. The equivalent weight of the metal is
(a) 3.325 (b) 33.25 (c) 12 (d) 20

④ A compound made up of two elements A and B is found to contain 25% A (atomic mass = 12.5) and 75% B (At. mass = 37.5). The simplest formula of the compound

- (a) AB (b) AB_2 (c) AB_3 (d) A_3B

⑤ Suppose the elements X and Y combine to form two compounds XY_2 and X_3Y_2 . When 0.1 mole of XY_2 weighs 10 g and 0.05 mole of X_3Y_2 weighs 9 g, the atomic weights of X and Y are
Ⓐ 40, 30 Ⓑ 60, 40 Ⓒ 20, 30 Ⓓ 30, 20

⑥ 6.02×10^{20} molecules of urea are present in 100 ml of its solution. The concⁿ of solution is
Ⓐ 0.001 M Ⓑ 0.1 M Ⓒ 0.02 M Ⓓ 0.01 M

⑦ 10 g of hydrogen and 64 g of oxygen were filled in a steel vessel and exploded. Amount of water produced in this reaction will be

Ⓐ 3 mol Ⓑ 4 mol Ⓒ 1 mol Ⓓ 2 mol

⑧ When 22.4 L of $H_2(g)$ is mixed with 11.2 L of $Cl_2(g)$ each at STP, the moles of $HCl(g)$ formed is equal to
Ⓐ 1 mol of $HCl(g)$ Ⓑ 2 mol of $HCl(g)$
Ⓒ 0.5 mol of $HCl(g)$ Ⓓ 1.5 mol of $HCl(g)$

⑨ A mixture of 2.3g of formic acid and 4.5g of oxalic acid is treated with conc. H_2SO_4 . The evolved gaseous mixture is passed through KOH pellets. Weight (in g) of the remaining product at STP will be

Ⓐ 1.4 Ⓑ 3.0 Ⓒ 2.8 Ⓓ 4.4

⑩ The number of moles of hydrogen molecules required to produce 20 moles of ammonia through Haber's process is

Ⓐ 10 Ⓑ 20 Ⓒ 30 Ⓓ 40

⑪ In which case is number of molecules of water maximum?

- Ⓐ 0.00224 L of water vapours at 1 atm and 273 K.
- Ⓑ 0.18 g of H_2O
- Ⓒ 18 mL of water
- Ⓓ 10^{-3} mol of water

⑫ An organic compound, on analysis was found to contain 71.7% of chlorine, 4.04% of hydrogen and rest is carbon. If its mol.wt is 99. Then calculate molecular formula

- Ⓐ $CHCl_3$ Ⓑ $C_2H_4Cl_2$ Ⓒ $C_2H_2Cl_2$ Ⓓ CH_3Cl

(13) Volume occupied by one molecule of H_2O
(density = 1 g cm^{-3}) is

- (a) $3.0 \times 10^{-23} \text{ cm}^3$ (b) $5.5 \times 10^{-23} \text{ cm}^3$
(c) $9.0 \times 10^{-23} \text{ cm}^3$ (d) $6.023 \times 10^{-23} \text{ cm}^3$

(14) The volume of oxygen required for complete combustion of 0.25 cm^3 of CH_4 at STP is

- (a) 0.25 cm^3 (b) 0.5 cm^3 (c) 0.75 cm^3 (d) 1 cm^3

(15) 1.0g of an oxide of A contained 0.5g of A. 4.0g of another oxide of A contained 1.6g of A. The data indicated the law of

- (a) Reciprocal proportions
(b) Constant proportions
(c) Conservation of energy
(d) Multiple proportions.

(16) 27g of Al (Atomic mass = 27) will react with oxygen equal to

- (a) 24g (b) 8g (c) 40g (d) 10g

(17) How many atoms are contained in one mole of sucrose ($C_{12}H_{22}O_{11}$)

- (a) $45 \times 6.023 \times 10^{23}$ atoms/mole
(b) $5 \times 6.623 \times 10^{23}$ atoms/mole
(c) $5 \times 6.023 \times 10^{23}$ atoms/mole
(d) None of these.

(18) What mass of CaO will be obtained by heating 3 mole of CaCO_3 . [At. mass of $\text{Ca} = 40$]

- (a) 150g (b) 168g (c) 16.8g (d) 15g

(19) 1 mol of CH_4 contains

- (a) 6.02×10^{23} atoms of H
(b) 4g atom of hydrogen
(c) 1.81×10^{23} molecules of CH_4
(d) 3.0g of carbon

(20) If the equivalent weight of a trivalent metal is 32.7, the molecular weight of its chloride will be

- (a) 68.2 (b) 103.7 (c) 204.6 (d) 32.7

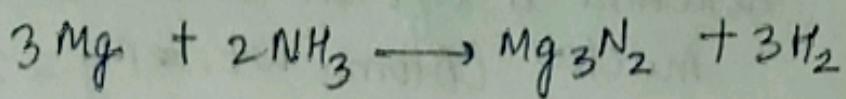
(21) The largest number of molecules is present in

- (a) 54g of Nitrogen peroxide
(b) 28g of carbon dioxide
(c) 36g of water
(d) 46g of ethyl alcohol

(22) Percentage of nitrogen in Urea is about

- (a) 46% (b) 85% (c) 18% (d) 28%

(23) The mass of Mg_3N_2 produced if 48 g of metal is reacted with 34 g NH_3 as is



- (A) $\frac{200}{3}$ (B) $\frac{100}{3}$ (C) $\frac{400}{3}$ (D) $\frac{150}{3}$

(24) 0.078 g of hydrocarbon occupy 22.4 ml of volume at 1 atm and $0^\circ C$. The empirical formula of the hydrocarbon is CH . The molecular formula is

- (A) C_2H_2 (B) C_4H_4 (C) C_6H_6 (D) $C_{15}H_{15}$

(25) The number of atoms present in one mole of an element is equal to Avogadro number. Which of the following element contains the greatest number of atoms?

- (A) 4 g of He (B) 46 g of Na (C) 0.40 g of Ca
(D) 12 g of He

(26) If the concentration of glucose in blood is 0.9 g L^{-1} , what will be the molarity of glucose in blood?

- (A) 5 M (B) 50 M (C) 0.005 M (D) 0.5 M

(27) What is the mass % of C in CO_2 ?

- (A) 0.034% (B) 27.27% (C) 3.4%
(D) 28.7%

28 1g of Magnesium is burnt with 0.56 g of O_2 in a closed vessel. Which reactant is left in excess and how much? (Atomic wt. $Mg = 24, O = 16$)

- (a) Mg, 0.16g (b) O_2 , 0.16g (c) Mg, 0.44g
(d) O_2 , 0.28g.

29 An excess of $AgNO_3$ is added to 100ml of a 0.01M solution of dichlorotetraqua-chromium (III) Chloride. The number of moles of $AgCl$ precipitated would be:-

- (a) 0.01 (b) 0.001 (c) 0.002 (d) 0.003

30 The number of atoms in 4.25 g of NH_3 is approx.

- (a) 1×10^{23}
(b) 2×10^{23}
(c) 4×10^{23}
(d) 6×10^{23}