1TTH CBSE SOME BASIC CONCEPTS OF CHEMISTRY TEST

1) One mole of CO_2 contains _____.

   (a) 6.02×10^{23} atoms of C   (b) 3 g of CO_2 (c) 6.02×10^{23} atoms of O   (d) 18.1×10^{23} molecules of CO_2

2) 5.6 litres of oxygen at NTP is equivalent to _____.

   (a) 1 mole   (b) $\frac{1}{4}$ mole   (c) $\frac{1}{8}$ mole   (d) $\frac{1}{2}$ mole

3) How many grams are contained in 1 gram atom of Na?

   (a) 13 g   (b) 1 g   (c) 23 g   (d) $\frac{1}{23}$ g

4) 12 g of Mg will react completely with an acid to give:

   (a) 1 mole of O_2 (b) $\frac{1}{2}$ mole of H_2 (c) 1 mole of H_2 (d) 2 mole of H_2

5) Which of the following has the highest mass?

   (a) 1 g atom of C   (b) $\frac{1}{2}$ mole of CH_4 (c) 10 mL of water   (d) 3.011×10^{23} atoms of oxygen

6) The empirical formula of sucrose is _____.

   (a) CH_2O (b) CHO   (c) $C_{12}H_{22}O_{11}$ (d) $C(H_2O)_2$

7) The number of significant figures in 0.0101 is _____.

   (a) 3   (b) 2   (c) 4   (d) 5

8) The number of grams of oxygen in 0.10 mol of $Na_2CO_3 \cdot 10H_2O$ is _____.

   (a) 20.8 g   (b) 18 g   (c) 108 g   (d) 13 g

9) The mass of an atom of nitrogen is _____.

   (a) $\frac{14}{6.023 \times 10^{23}}$ (b) $\frac{28}{6.023 \times 10^{23}}$ g   (c) $\frac{1}{6.023 \times 10^{23}}$ g   (d) 14 amu

10) Which of the following statements about a compound is incorrect?

   (a) A molecule of a compound has atoms of different elements

   (b) A compound cannot be separated into its constituent elements by physical methods of separation

   (c) A compound retains the physical properties of its constituent elements

   (d) The ratio of atoms of different elements in a compound is fIxed

2 Marks

112) Convert the following into basic units:
(i) 28.7 pm
(ii) 15.15 pm
(iii) 25365 mg

113) How many significant figures should be present in the answer of the following calculations?
(i) $\frac{0.02856 \times 298.15 \times 0.112}{0.5785}$
(ii) 5 × 5.364
(iii) 0.0125 + 0.7864 + 0.0215

114) Calculate the number of atoms in each of the following (i) 52 moles of Ar (ii) 52 u of He (iii) 52 g of He.

115) What is the SI unit of mass? How is it defined?

116) How are 0.50 mole Na_2CO_3 and 0.50 MNa_2CO_3 different?

117) If the speed of light is 3.0×10^8 m s^{-1}, calculate the distance covered by light in 2.00 ns

339) A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is 98.96 g. What are its empirical and molecular formulas?

340) Calculate the molarity of NaOH in the solution prepared by dissolving its 4 g in enough water to form 250ml. of the solution.

341) Round up the following upto three significant figures:
(i) 34.216
(ii) 10.4107
(iii) 0.04597
(iv) 2808

342) The density of 3 M solution of Na Cl is 1.25 g mL^{-1}. Calculate molality of the solution.

343) Calculate the mass of sodium acetate, CH_3COON required to make 500mL of 0.375 molar aqueous solution. Molar mass of sodium acetate is 82.0245 g mol^{-1}.