

J.E.E./A.I.P.M.T.Foundation - XI Chemistry Worksheet

Time: 30 min

Ch#1 : Some Basic Concepts of Chemistry -03

Full Marks: 20

Instructions:

1. All questions are compulsory.
2. Please give the explanation for the answer where applicable.

Q1 -Express the following in SI units-

- (i) Speed of ball 90 miles per hour
- (ii) Carbon - carbon bond length 1.33 Å

(2 Marks)

Q2 - Solve the following and state the answer in proper number of significant digits.

$$108/8.2$$

(2 Marks)

Q3 - On complete combustion 0.858 g of compound (x) gives 2.63 g of CO₂ and 1.27g of H₂O. Calculate the empirical formula of the compound.

(5 Marks)

Q4 -Density of mercury is 13.6 g/cc. Its density in Kg m⁻³ is

(1 Mark)

Q5 - Solve the following and express the answer in standard exponential form $(2.0 \times 10^{13}) + (1.5 \times 10^{14})$.

(1 Mark)

Q6 - (i) How many moles of sulphur will be produced when 2 moles of H₂S reacts with 11.2L of SO₂ at NTP.

(ii) Name the limiting reagent in the above reaction.

(2 Marks)

Q7 - Define limiting reagent.

(1 Mark)

Q8 -A car consumes 30 moles per gallon of gasoline and drives 12000 miles per year. Calculate the amount of oxygen required to run the car for one year.

[Assume that octane (C₈H₁₈) is the main component of the gasoline.]

(3 Marks)

Q9 -The mass of an empty beaker is 50.55g. The mass of a same beaker when filled completely with a liquid is 150.457g. If the volume of the empty glass is 100.2ml, calculate the density of the liquid. Express the answer in appropriate significant figures.

(3 Marks)