QUIZ CHAPTER 1

7 A solution is prepared by dissolving 14.9 g XCl in water. When excess silver nitrate solution is added to the solution, 28.7 g of silver chloride precipitate is formed. What is the relative atomic mass of X?

A 11.0   B 39.0

C 46.5   D 74.5

8 At temperature $T°C$ and pressure P atm, 500 cm^3 of an unknown diatomic gas contains 7.50×10^{22} molecules and has a density of 8.00×10^{-3} g cm^{-3}. Which statement is true about the gas?

[Avogadro constant = 6.02×10^{23} mol^{-1}]

A It is a polar molecule.

B It behaves as an ideal gas.

C It has two allotropes.

D Its relative atomic mass is 16.

9 A volume of 10 cm^3 C_2H_6 has burned completely in 50 cm^3 O_2. Which statement is true about the combustion at room temperature and atmospheric pressure?

A The volume of liquid H_2O is 60 cm^3.

B The volume of excess O_2 is 15 cm^3.

C The volume of the remaining mixture is 65 cm^3.

D The total volume of CO and CO_2 formed is 20 cm^3.

10 In an experiment, 30 cm^3 of hydrocarbon X is completely combusted in 140 cm^3 oxygen gas. After it is cooled to room temperature, the volume of carbon dioxide gas and excess oxygen gas is 95 cm^3. The volume of the gaseous mixture decreases by 60 cm^3 after passing into an aqueous solution of potassium hydroxide. The volume is measured at the same temperature and pressure. The molecular formula of X is

A C_2H_2

B C_2H_4

C C_2H_6

D C_3H_8

11 Which statement is **not** true when 12.6 g of a hydrocarbon, C_6H_y is burned in excess oxygen to produce 0.90 mol carbon dioxide gas?

A The empirical formula of the hydrocarbon is CH_2.

B The relative molecular mass of the hydrocarbon is 84.

C The number of moles of water vapour formed is 0.90 mol.

D The total number of moles of gases present after a complete combustion is 1.80 mol.