Stoichiometry

1. **Four grams of hydrocarbon (C_x H_y) on complete combustion gave 12 grams of CO_2. What is the empirical formula of the hydrocarbon?**

(M-2005)

1) CH_3 2) C_4H_9 3) CH 4) C_3H_8

Ans: 1

2. **An organic compound containing C and H has 92. 3 % of carbon. Its empirical formula is** **(M - 2004)**

1) CH 2) CH_3 3) CH_2 4) CH_4

Ans: 1

3. **An organic compound is found to contain C = 54.5%, O=36.4% and H = 9.1% by mass. Its empirical formula is** **(KCET)**

1) CH_2O 2) CHO_2 3) C_2H_4O 4) C_3H_4O

Ans: 3

4. **The molecular weight of an organic compound is 180. Its empirical formula is CH_2O. The molecular formula is** **(E- 1996)**

1) $C_6H_{12}O_6$ 2) $C_7H_{16}O_5$ 3) $C_8H_4O_5$ 4) $C_5H_8O_7$

Ans: 1

5. **0.262g of a substance gave, on combustion, 0.361g of CO_2 and 0.147g of H_2O. What is the empirical formula of the substance** **(E - 1996)**

1) CH_2O 2) C_3H_6O 3) $C_3H_6O_2$ 4) $C_2H_6O_2$

Ans: 1

6. Four grams of hydrocarbon (C_xH_y) on complete combustion gave 12grams of CO_2.What is the empirical formula of the hydrocarbon

(C = 12; H = 1) (E-2005)

1) CH_3 2) C_4H_9 3) CH 4) C_3H_8

Ans: 4

7.An alkane has C/H ratio (by mass) of 5.1428. Its molecular formula is (KCET)

1) C_5H_{12} 2) C_6H_{14} 3) C_8H_{18} 4) C_7H_{16}

Ans: 2

8. A dibasic acid containing C, H and O was found to contain C=26.7% and H=2.2%. The vapour density of its dimethyl ester was found to be 73. The molecular formula of the acid is (AIIMS 2005)

1) CH_2O_2 2) $C_2H_2O_4$ 3) $C_3H_3O_4$ 4) $C_2H_4O_4$

Ans: 2

9. 10ml of an alkane on complete combustion gave 40ml of CO_2 under the same conditions. The formula of the alkane is

1) C_2H_6 2) C_3H_8 3) C_5H_{12} 4) C_4H_{10}

Ans: 4

10. 15 c.c. of gaseous hydrocarbon required 45 c.c. of oxygen for complete combustion and 30 c.c. of carbondioxide is formed. The formula of the hydrocarbon is (BHU)

1) C_3H_6 2) C_2H_2 3) C_4H_{10} 4) C_2H_4

Ans: 4