MOLECULAR FORMULAS WORKSHEET
(Chemistry 11)

1) A compound is composed of 7.20g of C, 1.20g of H, and 9.60g O. The molar mass of the compound is 180.g. Find the empirical and molecular formula for this compound.

2) A compound is composed of 16.66g C and 3.49g H. The molar mass of the compound is 58g. Find the empirical and molecular formulas for this compound.

3) A compound contains 62.0% C, 10.4% H, and 27.5% O. Determine the empirical formula for this compound. After analysis, it was found that the compound's molar mass is 58.1g. What is the compound's molecular formula?

4) Glucose, one of the main sources of energy used by living organisms, has a molecular mass of 180.2g. Chemical analysis shows that glucose is 40.0% C, 6.71% H and 53.3% O. Determine glucose's molecular formula.

5) A class of compounds called sodium metaphosphates were used as additives to detergents to improve cleaning ability. One of them has a molecular mass of 612g. Analysis shows the composition to be 22.5% Na, 30.4% P, and 47.1% O. Determine the molecular formula of this compound.

6) Find the molecular formula for a compound that has a molecular mass of 92g.mole. The % composition of the compound is 30.4% N, and 69.6% O.

7) Find the molecular formula for a compound that has a GMM of 99g/mole. Its % composition is 24.2% C, 4.0% H, and 71.7% Cl.

Answers:

1) Empirical Formula: CH_2O Molecular Formula: $C_6H_{12}O_6$

2) Empirical Formula: C_2H_5 Molecular Formula: C_4H_{10}

3) C_3H_6O

4) Empirical Formula: CH_2O Molecular Formula: $C_6H_{12}O_6$

5) $Na_6P_6O_{18}$

6) N_2O_4

7) $C_2H_4Cl_2$