**Ch. 8 Percent Composition, Empirical and Molecular Formulas**

1. What is the mass percent of chlorine in PCl5?
   1. 53.4%
   2. 17.3%
   3. 85.1%
   4. 14.9%
2. A compound contains 6.87 g of iron and 13.1 g of the element chlorine. What is the mass percent of iron in this compound?
   1. 34.4%
   2. 52.4%
   3. 65.6%
   4. 87.4%
3. What is the empirical formula for propyl acetate, C5H10O2?
   1. C5H10O2
   2. CH2O2
   3. C10H20O4
   4. CH2O
4. Which pair of compounds have the same empirical formula?
   1. NO2 and NO3
   2. C2H2 and C6H6
   3. NH3 and N2H4
   4. CH4 and C2H6
5. Which formula must be a molecular formula?
   1. N2O
   2. N2H4
   3. NaCl
   4. NH3
6. A compound is 52.14% C, 13.13% H, and 34.73% O by mass. What is the compound’s empirical formula?
   1. C2H8O3
   2. C2H6O
   3. C4HO3
   4. C3HO6
7. A compound has the empirical formula CH2O and a molar mass of 120.10 g/mol. What is the molecular formula for the compound?
   1. CH2O
   2. C2H4O2
   3. C3H6O3
   4. C4H8O4
8. A compound contains 26.58% K, 35.45% Cr, and 37.97% O. What is its empirical formula?
   1. KCrO
   2. K0.680Cr0.682O2.37
   3. KCrO3.5
   4. KCrO4
   5. K2Cr2O7
9. An unknown hydrocarbon contains 40.00% C, 6.72% H, and 53.28% O. The compound’s molar mass is 180.16 g/mol. What is the molecular formula of the compound?
   1. C6H12O6
   2. C3H7O3
   3. CH2O
   4. C3.33H6.67O3.33
10. A binary compound of mercury and oxygen decomposes upon heating, producing oxygen gas, which escapes, leaving mercury residue behind. Heating 0.6498 grams of the compound leaves a residue of 0.6018 grams behind. What is the empirical formula for the compound?
    1. HgO
    2. HgO2
    3. Hg2O4
    4. Hg2O2
    5. HgO6