

Key

CHM 151 Quiz #4a 20 Pts Fall 2000 Name Comp III practice

1. (5 Pts) The compound that is responsible for the characteristic smell in garlic is allicin. Its chemical composition by mass is: 44.4% C; 6.21% H; 39.5% S; and 9.86% O.

a. (4 Pts) Determine the empirical formula for allicin. (SHOW ALL WORK) (ans) $C_6H_{10}S_2O$

b. (1 Pt) The molar mass of allicin is 162 g/mol.
What is its molecular formula? (SHOW ALL WORK)

(ANS) (same as empirical since molar mass = empirical mass)

2. (a) What mass of $ZnCl_2$ can be prepared from the reaction of 3.27 grams of zinc with 3.30 grams of HCl? (b) What is the % yield if 5.2 g were recovered?



a) ANS 6.17

3. Calculate the molarity of a solution that contains 70.0 g of H_2SO_4 in 280 mL of solution.

ANS. 2.55M

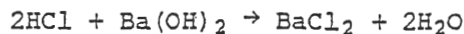
4. What mass of $CaCl_2$ must be dissolved in enough water to produce 2000 mL of 1.25 M $CaCl_2$?

ANS 277g

5. How many mL of 18.4 M H_2SO_4 are needed to prepare 600 mL of 0.10 M H_2SO_4 ?

ANS. 3.3 mL

6. What volume of 0.130 M HCl solution will just react with 0.424 gram of $Ba(OH)_2$?



ANS. 38.1 mL