

CHEM 1100 Practice for **Quiz 5** Spring 2014: **Molarity, % Yield, % Composition, Net ionic**

1. What is the molarity of a solution that has 3.42 moles of sodium chloride in 2.50 L?
2. What is the molarity of a solution that is made by mixing 122 grams of calcium fluoride in 1.50 L of water?
3. What volume of a 0.15M solution of magnesium nitrate will contain 0.10 moles of magnesium?
4. What volume of a 0.15M solution of magnesium nitrate will contain 0.10 moles of nitrate ions?
5. If you take 10 mL of a 6.0M hydrochloric acid solution and dilute it to 110 mL, what is the concentration of hydrochloric acid in the dilute solution?
6. What volume of 2.00 M sodium carbonate is needed to make 500 mL of a 0.100M solution of sodium carbonate?

7. What is the molarity of a nitric acid solution if 20 mL of the nitric acid solution are titrated with 22.34 mL of a 0.1000 M solution of sodium hydroxide?

8. Hydrogen and chlorine react to form hydrogen chloride. How many grams of hydrogen chloride was made if the reaction yield was 55% when 2.53 grams of hydrogen was combined with 9.54 g of chlorine?

9. When 2.0 grams of salicylic acid are combusted, 4.46 g of carbon dioxide and 0.78 g of water are produced. What is the empirical formula for salicylic acid?

10. How many moles of salicylic acid are present if a 1.0 gram sample requires 72.42 mL of 0.1000 M NaOH for neutralization in a titration?

11. Use the information in question three and the moles you obtained in question 3, to determine the molar mass of salicylic acid.

12. Write the net ionic equation for the reaction of sodium phosphate with calcium chloride.