

Name: _____

Quiz #6

CHEM 1411 — Spring 2019

Due Tuesday, February 26 by 8:00 am

Late papers will not be accepted!

Solution Concentration

1. A solution made by dissolving 155.25 g of calcium nitrate in water to make 500.0 mL of solution. Calculate the molarity of the solution. (10 pts)

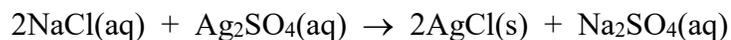
2. How many grams of lead(II) nitrate are in 250 mL of a solution that has a concentration of 0.10 M? (10 pts)

3. How many mL of 0.500 M Na_3PO_4 are required to have a mass of 2.00 g of Na_3PO_4 ? (10 pts)

4. If a sample of 100.0 mL of 12.0 M HCl is diluted to a volume of 500.0 mL, what is the concentration of HCl in the resulting solution? (10 pts)

Solution Stoichiometry

5. How many milliliters of 0.125 M NaCl is required to completely precipitate all of the silver in 50.00 mL of a 0.250 M silver sulfate solution? (10 pts)

**Electrolytes and Nonelectrolytes**

6. Classify each of the following compounds as being a **strong electrolyte**, **weak electrolyte**, or **nonelectrolyte**. (10 pts)

a. HNO_2 _____

b. H_2SO_3 _____

c. $\text{C}_6\text{H}_{12}\text{O}_6$ _____

d. $\text{NaC}_2\text{H}_3\text{O}_2$ _____

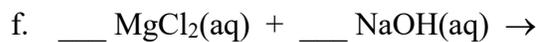
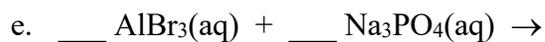
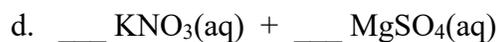
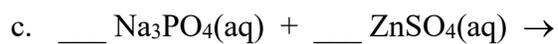
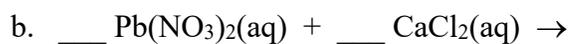
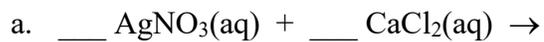
e. $\text{Mg}(\text{NO}_3)_2$ _____

7. Complete and balance the following reaction, and write the complete ionic equation and the net ionic equation. (Include phase labels in the molecular and net ionic equations. It is not necessary to include phase labels for the complete ionic equation.) (10 pts)



Precipitation Reactions

8. Complete and balance the following precipitation reactions. **Be sure to include phase labels!** If no reaction occurs, write "NR." (20 pts)



9. A solution of 25.00 mL of 0.250 M nickel(II) chloride solution is mixed with 30.00 mL of 0.400 M sodium carbonate solution. How many grams of precipitate should be produced? (*Hint*: this is a limiting reactant problem.) (10 pts)