

STUDY SHEET EXAM 4

1. Define and/or describe: reactant, product, coefficient, balanced equation, combination reaction, decomposition reaction, single replacement reaction, double replacement reaction, combustion reaction, neutralization, limiting reactant (reagent), excess reactant (reagent), theoretical yield, actual yield, net ionic equation.
2. List and/or recognize four observations that are evidence that a chemical reaction has taken place.
3. Given the formulas for all reactants and products, balance the equation for a chemical reaction.
4. Given the names or formulas of the reactants for a reaction, determine the reaction type.
5. Given the names or formulas of the reactants
 - a. write and balance the equation
 - b. write the state of matter designation for each reactant and product.
6. Determine whether a given double replacement reaction will "go to completion".
7. Given an activity series for metals, determine if a given single replacement reaction will occur.
8. Given the balanced equation (or a reaction for which the balanced equation can be written) and the number of grams or moles of one substance in the reaction, calculate the number of grams or moles of any other substance in the reaction.
9. Given the quantity of any substance participating in a chemical reaction for which the balanced equation is given or may be written, calculate the quantity of any other substance, either quantity being measured in (a) grams or (b) volume of solution of specified molarity.
10. Given the volumes of solutions of two substances that react with each other according to an equation which is given or may be written, and the molarity of one of the solutions, calculate the molarity of the other solution.
11. Given the quantities of two reactants involved in a chemical reaction for which the balanced equation is given or may be written, determine:
 - a. which reactant is the limiting reactant
 - b. which reactant is present in excess
 - c. the mass of a specified product produced in the reaction
 - d. the mass of excess reactant remaining
12. Given two of the following, or data from which two of the following may be determined, calculate the third: theoretical yield, actual yield, percent yield.
13. Given the formulas or names of the reactants, write the molecular, total, and net ionic equations for the reaction.
14. Be able to solve any of the assigned textbook problems. (These are the problems at the back of a chapter that are assigned but not collected.)