Study Guide – Stoichiometry Post-Test   Name: _____

Chemistry

2 points   **DUE AT POST-TEST (TUES., 4/29/14)**   Date: _____ Hour: _____

Topics/concepts covered on post-test:

|		
stoichiometry	mole-mole stoichiometry	mass-mass stoichiometry
balancing equations	coefficients	mole ratios
limiting reactant	excess reactant	double displacement reaction
writing compound formulas	molar masses	solubility of salts chart
preciptate	Lab #17 (percent yield/precipitate lab)	

Practice questions:

1)   (a)   When watching a reaction, how can you identify the limiting reactant? _____

_____

(b)   When doing a stoichiometry calculation, how can you identify the limiting reactant?

_____

2)   What do the coefficients in a balanced equation stand for? _____

_____

3)   How many moles of ammonia gas (NH_3) can be made from 5.00 moles of hydrogen gas?

_____ $N_{2\,(g)}$ + _____ $H_{2\,(g)}$ -----> _____ $NH_{3\,(g)}$ [3.33 mol H_2]
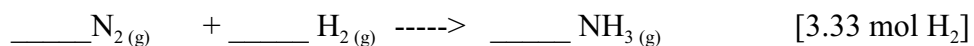
4)   Tungsten carbide is a compound composed of tungsten and carbon. One possible equation
    for its formation is

_____ W + _____ C —> _____ WC
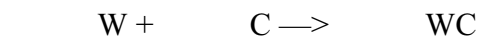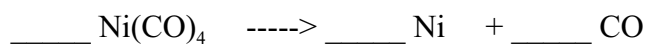
If a chemist starts with 4.00 g of W and 4.00 g of C,
        (a) How many grams of WC can be formed? (requires two calculations)   [4.26 g]
   (b) What is the limiting reactant?
        (c) What is the excess reactant?

5)   Nickel and carbon dioxide can be produced using a decomposition reaction.

_____ $Ni(CO)_4$ -----> _____ Ni   + _____ CO

If 4.50 grams of nickel are produced, how many grams of carbon monoxide will be produced?   [8.59 g CO]

6)   A rocket fuel is prepared by reacting hydrazine and dinitrogen tetroxide according to the balanced equation

$2 N_2H_{4\ (l)}$ + $N_2O_{4\ (l)}$ -----> $3 N_{2\ (g)}$ + $4 H_2O_{\ (g)}$
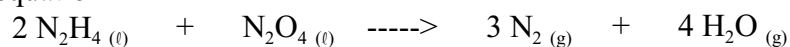
Write six mole ratios for this reaction:

7)   A chemist calculated that she could make 56.72 g of product using a certain reaction. During the lab, she was only able to produce 43.95 g. What was her percent yield?   [77.49%]

8)   (a)   Iron (III) chloride and potassium phosphate react in a double displacement reaction. How many grams of precipitate can be produced when 3.50 g of iron (III) chloride and excess potassium phosphate react?   [3.25 g $FePO_4$]

(b)   Draw and label the lab set-up for separating the precipitate from the solution: