Worksheet 11 – CHEM 121 – Fall 2015

Monday Name: _______________________________

Wednesday Name: ____________________________

Directions: **Section VII invocation** -- Inasmuch as what time I use to generate your worksheets is tied up tomorrow (6 Oct 2015) in administrative meetings and evaluations, you are receiving this worksheet a day plus early. To that end, we’re changing the way this worksheet will be handled: this worksheet is to be 100% completed when you walk into class Wednesday, 7 October 2015. You have plenty of time to contact your partner[s], to read the notes, to come see me in office hours and to complete the work, i.e., there’s no valid excuse for not having this worksheet 100% completed when you walk into class. We’ll start right on the board at 1730 hours.

1) Complete the following periodic table – do it right, because you’ll be using it throughout this worksheet.

![Periodic Table](image)

2) There are 2 parts to this question (top of next page are the reactions you need for this question): 1) balance the following reactions and 2) identify which of these reactions is redox decomposition, non-redox decomposition, redox combination, non-redox combination, single replacement or double replacement reactions *(PS – sometimes I don’t follow the rules of chemistry when I write questions for students to balance – you may have to add or remove subscripts as you solve the problems)* – keep an eye on your apparent charges – do you see why you need to make sure your periodic table is completed correctly? It’s a good thing you’ve already memorized all of those polyatomic ions from the Lewis Structures Experiment, eh?:
A) Mg + Cl₂ → MgCl₂
B) Na + N₂ → NaN₃

C) Ba + S → BaS
D) NaOH + H₂SO₄ → NaSO₄ + H₂O

E) LiCO₃ + HCl → LiCl₂ + H₂O + CO₂↑
F) Sr(NO₃)₂ + HCl → SrCl₂ + HNO₃

G) K + H₂O → KOH + H₂↑
H) Al + O₂ → Al₂O₃

I) MnSO₄ + HNO₃ → Mn(NO₃)₂ + H₂SO₄
J) Fe + O₂ → Fe₃O₄
3) How many mol of H$_2$SO$_4$ do you have if you have 24.5 g H$_2$SO$_4$?

4) How many mol of NaOH do you have if you have 10 g NaOH?

5) How many mol of C$_6$H$_{12}$O$_6$ do you have if you have 45 g C$_6$H$_{12}$O$_6$?

6) How many grams of CuSO$_4$ are present in 0.25 mol of CuSO$_4$?

7) How many grams of Al(OH)$_3$ are present in 3.4 mol Al(OH)$_3$?
8) How many grams of BaSO₄ are present in 0.78 mol BaSO₄?

9) Using the factoring (FOIL) method, determine the positive solutions for the following:

\[ 2x^2 + 6x - 8 = 0 \]

10) Using the quadratic formula, solve #9 for the positive result.