**Quarter Four Bonus Quiz – Honors Chemistry**

As has been the case with other bonus quizzes, whatever you get on this quiz may be used to replace a lower quiz grade from earlier in the quarter. If your bonus quiz grade is lower than all of your quarter grades, it will not be counted against you in any way.

1. For each of the following equations, predict the reaction products (if it occurs), balance the equation, and indicate the type of reaction taking place. (3 pt each)

\_\_\_ NaOH + \_\_\_ H3PO4 🡪

\_\_\_ Li + \_\_\_ Pb(NO3)2 🡪

\_\_\_ CaCl2 + \_\_\_\_ MgBr2 🡪

1. Write the complete equation for the following reaction: When lithium carbonate (Li2CO3) crystals are heated at a temperature of 250o C, they decompose into gaseous carbon dioxide and lithium oxide (Li2O) powder. This reaction neither absorbs nor releases energy. (5 pt)
2. Let’s say that I want to perform the reaction in problem 2 with 50 grams of lithium carbonate. How many grams of lithium oxide will I make? (5 pt)
3. Why is it impossible for me to ask a limiting reagent question about the reaction in question 2? (3 pt)
4. List three postulates of the kinetic molecular theory. (3 pt)
5. If I have 12 moles of a gas at a temperature of 25o C and in a 6.0 L container, what is the pressure inside this container? R = 0.08206 Latm/molK. (3 pt)
6. If I compress the gas in problem 5 to a volume of 18.0 L, what will the pressure inside the container be? (3 pt)
7. What is the difference between a colloid and a suspension? (3 pt)
8. What is the molarity of a solution made by adding water to 5.5 grams of NaCl until the final volume of the solution is 225 mL? (3 pt)
9. What is the melting point of a solution made by adding 25 grams of NaCl to 450 mL of water? (Kf = 1.86o C/m) (5 pt)
10. Why does the melting point of a solution decrease when the concentration of the solution is increased? (3 pt)