Chemistry Exam 1st Semester Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider the following 10 compounds. Write out their correct chemical formula and then tell me if they are soluble or insoluble in water.

1. Calcium nitrate

2. Sodium sulfate

3. Ammonium sulfide

4. Aluminum chloride

5. Iron(III) bromide

6. Cobalt (II) phosphate

7. Chromium (VI) chromate

8. Di nitrogen pentoxide

9. Nitrogen gas

10. Potassium oxide

If you are a 1st hour student, give me the molar mass, %by mass of each element of #1, #3 and #8. If you are a 2nd hour student do the same for #2, #5 and #6.

Write out a balanced chemical equation for a reaction between #10 and #2. If you begin with 10.8 grams of #10, then tell me how many moles of each product you would form in this reaction. Assume that you have excess #2 (Which most people have).

For 2nd hour students only, write out a balanced chemical equation between #3 and #5. If you begin with 10 grams of #3 and 15 grams of #5, tell me how many grams of each product you would form in this reaction.

For all students. Write out a balanced chemical equation for a reaction between sodium carbonate and hydrochloric acid (HCl). You will get 3 products formed of which one product will be carbon dioxide gas. The gas formed and collected will have a pressure of 1.8atm, 36C, and a volume of 3.8L. How many moles of carbon dioxide gas are collected? For 2nd hour students only. How many grams of sodium carbonate were reacted?

Draw a correct Lewis structure for the following molecules

A. NH3

B. O2

C. H2O

D. CO2

E. (2nd hour students only) SCl2