**CH30S Chemical Reactions Part 1 Review**

1. What is an isotope?
2. State 5 different isotopes and their uses in technology today.
3. Calculate the average atomic mass given the following data:
   1. Ga-69 🡪 60%
   2. Ga-71 🡪 40%
4. How does carbon-14 dating work?
5. Chlorine has 2 major isotopes: Cl-35 and Cl-37. Find the average atomic mass of chlorine if you take a sample of 10,000 chlorine atoms and you get the following information:
   1. There are 7550 atoms of Cl-35
   2. There are 2450 atoms of Cl-37
6. a. What is the difference between an ionic and a covalent compound?

b. List the rules for naming an ionic compound.

c. List the rules for naming a covalent compound.

d. Account for the difference in naming these two types of compounds.

1. List the 7 diatomic molecules you need to know!
2. Name the following substances:
   1. CaI2
   2. CO
   3. NO2
   4. SO2
   5. CaCO3
   6. P4O10
   7. KBr
   8. CaF2
   9. H3P
   10. Ca3P2
   11. Al2S3
   12. PbO2
   13. SnF4
   14. CuI
3. Write formulas for the following substances:
   1. Zinc selenide
   2. Beryllium fluoride
   3. Cadmium oxide
   4. Lead (IV) persulphate
   5. Sodium nitrite
   6. Lithium hyposulphate
   7. Potassium dichromate
   8. Sodium chlorate
   9. Aluminum carbonate
4. Do the balancing worksheet attached!
5. Why must we balance equations? Explain using an example.
6. How could we test for:
   1. Hydrogen gas?
   2. Oxygen gas?
   3. Carbon dioxide?
7. Write formulas or name the following:
   1. Barium persulphate
   2. Aluminum nitrate
   3. Calcium hyposulphite
   4. Sodium perchlorate
   5. ZnSO3
   6. CaSO3
   7. Na2CO2
8. Calculate the molecular mass of each of the following:
   1. MgO
   2. PuC
   3. Al4Si3
   4. NaCl
   5. C3H4O2
   6. KNO3
   7. Hydrogen gas
   8. Oxygen gas
9. Calculate the molar mass of the following compounds:
   1. CaI2
   2. CO
   3. NO2
   4. SO2
   5. CaCO3
   6. P4O10
   7. KBr
   8. CaF2
10. What is a mole?
11. Writing equations:
    1. Iron (III) oxide + carbon 🡪 carbon monoxide + iron
    2. Potassium bromide + aluminum nitrate 🡪 potassium nitrate + aluminum bromide
    3. Iron (II) sulphide + oxygen gas 🡪 iron (II) oxide + sulphur
    4. Magnesium burns to produce magnesium oxide
12. Predict the products:
    1. Potassium iodide and ammonium nitrate
    2. Lithium metal and bromine gas
    3. Iron plus copper (II) sulphate
    4. Propane (C3H8) plus oxygen