**General Chemistry – Equations Test**

Answer the following questions. Remember to show your work so you can get partial credit if you get the wrong answer!

Balance these equations (1 pt each)

1. \_\_\_\_ CuSO4 + \_\_\_\_ Ga(OH)3 → \_\_\_\_ Cu(OH)2 + \_\_\_\_ Ga2(SO4)3
2. \_\_\_\_ MgF2 + \_\_\_\_ NaNO3 → \_\_\_\_ Mg(NO3)2 + \_\_\_\_ NaF
3. \_\_\_\_ SnS2 + \_\_\_\_ H2 → \_\_\_\_ Sn + \_\_\_\_ H2S

Write the complete equation for the following processes: (5 pt each)

1. When a solution of copper(II) sulfate (CuSO4) – is added to a heated solution of sodium oxide (Na2O), the products are powdered copper(II) oxide (CuO) powder and dissolved sodium sulfate (Na2SO4). This reaction does not cause a temperature change.
2. When cesium (Cs) metal is placed into water, solid cesium hydroxide (Cs(OH)2) and hydrogen gas (H2) are formed. This reaction is extremely explosive!
3. A secondary reaction takes place when the reaction above occurs. Once the hydrogen gas (H2) has been formed, the heat from the reaction above causes the hydrogen to react with oxygen (O2) in the atmosphere to form steam (H2O). This reaction, by itself, is highly explosive.

Balance the following equations and indicate what type of reaction is occurring here:

1. \_\_\_\_\_ H2SO4 → \_\_\_\_\_ H2O + \_\_\_\_\_ SO3
2. \_\_\_\_\_ Na + \_\_\_\_\_ Br2 →\_\_\_\_\_ NaBr
3. \_\_\_\_\_ ZnS + \_\_\_\_\_ LiOH → \_\_\_\_\_ Zn(OH)2 + \_\_\_\_\_ Li2S
4. \_\_\_\_\_ HBr + \_\_\_\_\_ Ba(OH)2 → \_\_\_\_\_ H2O + \_\_\_\_\_ BaBr2

Answer the following short questions: (1 pt each)

11) What type of reaction always gives off heat? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) Why do we need to balance equations?

13) What is “stoichiometry”?

14) What is the molar mass of sulfurous acid (H3SO3)? (1 pt)