**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. \_\_\_\_ Cu2SO4 + \_\_\_\_ Ga(OH)3 → \_\_\_\_ CuOH + \_\_\_\_ Ga2(SO4)3
2. \_\_\_\_ MnF3 + \_\_\_\_ NaNO3 → \_\_\_\_ Mn(NO3)3 + \_\_\_\_ NaF
3. \_\_\_\_ SnS + \_\_\_\_ 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 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 calcium (Ca) metal is placed into water, solid calcium hydroxide (Ca(OH)2) and hydrogen gas (H2) are formed. This reaction becomes quite warm.
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 + \_\_\_\_\_ P4 →\_\_\_\_\_ Na3P
3. \_\_\_\_\_ ZnS + \_\_\_\_\_ LiOH → \_\_\_\_\_ Zn(OH)2 + \_\_\_\_\_ Li2S
4. \_\_\_\_\_ H2SO3 + \_\_\_\_\_ Ba(OH)2 → \_\_\_\_\_ H2O + \_\_\_\_\_ BaSO3

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 (H2SO3)? (1 pt)