

Name: _____

Date: _____

[4 pt] 1. List the 4 criteria used in class to determine if a chemical reaction has occurred. (Not observations made in lab, but when writing chemical reactions on paper.)

[2 pt] 2. List the 7 elements that should always be written as diatomics.

[3 pt] 3. List the 11 elements that are found as gases. List the 2 elements that are found as liquids.

[2 pt] 4. List 8 common molecular gases that are likely to be found in chemical reactions.

[2 pt] 5. How can one identify if a compound is a base. Give the formula and name for 4 bases.

[2 pt] 6. How can one identify if a compound is an acid? Give the formula and name for the 10 most common acids.

[5 pt] 7. Are the following species Insoluble (s) or Soluble (aq) in water?

(a) MgC_2O_4 7(a) _____

(b) $\text{Zn}(\text{OH})_2$ 7(b) _____

(c) CuCl_2 7(c) _____

(d) $(\text{NH}_4)_2\text{S}$ 7(d) _____

(e) $\text{Ni}(\text{NO}_3)_2$ 7(e) _____

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[20 pt] 8. Change these word equations into formula equations. Balance all ionic compounds. Balance the overall reaction. Include the state of each reactant and product when known.

(a) water \longrightarrow hydrogen + oxygen

(b) acetic acid + potassium hydroxide \longrightarrow potassium acetate + water

(c) phosphorus + iodine \longrightarrow phosphorus triiodide

(d) aluminum + copper (II) sulfate \longrightarrow copper + aluminum sulfate

(e) ammonium sulfate + barium chloride \longrightarrow ammonium chloride + barium sulfate

(f) sulfur tetrachloride + water \longrightarrow sulfur dioxide + hydrochloric acid

(g) chromium (III) carbonate \longrightarrow chromium (III) oxide + carbon dioxide