

Name \_\_\_\_\_

Chemistry

Date \_\_\_\_\_

Instructor: Ms. Brunsting

### Module 8 Lab: Naming Compounds

- Name the following binary salts (ionic salts).
  - $\text{Na}_3\text{P}$
  - $\text{MgO}$
  - $\text{ZnH}_2$
  - $\text{Ca}_3\text{N}_2$
  - $\text{Li}_2\text{S}$
- Name the following compounds using the "ic", "ous" system and the Stock System.
  - $\text{CrS}$
  - $\text{CuCl}$
  - $\text{FeS}$
  - $\text{Fe}_2\text{O}_3$
  - $\text{CoBr}_3$
  - $\text{SnF}_4$
  - $\text{HgO}$
  - $\text{PbBr}_2$
- Name the following salts.
  - $\text{Na}_2\text{SO}_4$
  - $\text{Ca}_3(\text{PO}_4)_2$
  - $\text{NaMnO}_4$
  - $\text{Ba}(\text{NO}_2)_2$
  - $\text{KNO}_3$
  - $\text{K}_2\text{Cr}_2\text{O}_7$
- Name the following compounds using the old system ("ic", "ous").
  - $\text{FeSO}_4$
  - $\text{Fe}(\text{OH})_3$
  - $\text{Hg}(\text{NO}_3)_2$
  - $\text{Co}_2(\text{CO}_3)_3$
  - $\text{CuCO}_3$
  - $\text{CuCN}$
- Write the formulas for the following compounds.
  - Ferrous sulfide
  - Cupric hydroxide
  - Mercury (II) chloride
  - Aluminum sulfide
  - Manganese (IV) oxide
  - Stannous fluoride
  - Potassium permanganate
  - Calcium carbonate
  - Ferrous sulfate
  - Lead (II) carbonate
  - Sodium nitrate

## ION NAMES

|                                          |                                                                                                                                                              |                                                                                                                                             |                                                                                                                                                                                  |                                                                                                                                                                         |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Oxidation Number 1<sup>+</sup></b>    | NH <sub>4</sub> <sup>+</sup><br>Cu <sup>+</sup><br>H <sup>+</sup><br>Hg <sup>+</sup>                                                                         | ammonium<br>copper (I), cuprous<br>hydrogen<br>mercury (I), mercurous                                                                       | Li <sup>+</sup><br>K <sup>+</sup><br>Ag <sup>+</sup><br>Na <sup>+</sup>                                                                                                          | lithium<br>potassium<br>silver<br>sodium                                                                                                                                |
| <b>Oxidation Number 2<sup>+</sup></b>    | Ba <sup>2+</sup><br>Be <sup>2+</sup><br>Cd <sup>2+</sup><br>Ca <sup>2+</sup><br>Cr <sup>2+</sup><br>Co <sup>2+</sup><br>Cu <sup>2+</sup><br>Fe <sup>2+</sup> | barium<br>beryllium<br>cadmium<br>calcium<br>chromium (II), chromous<br>cobalt (II), cobaltous<br>copper (II), cupric<br>iron (II), ferrous | Mg <sup>2+</sup><br>Pb <sup>2+</sup><br>Mn <sup>2+</sup><br>Hg <sup>2+</sup><br>Ni <sup>2+</sup><br>Sr <sup>2+</sup><br>Sn <sup>2+</sup><br>VO <sup>2+</sup><br>Zn <sup>2+</sup> | magnesium<br>lead (II), plumbous<br>manganese (II), manganous<br>mercury (II), mercuric<br>nickel (II), nickelous<br>strontium<br>tin (II), stannous<br>vanadyl<br>zinc |
| <b>Oxidation Number of 3<sup>+</sup></b> | Al <sup>3+</sup><br>As <sup>3+</sup><br>Cr <sup>3+</sup>                                                                                                     | aluminum<br>arsenic (III), arsenious<br>chromium (III), chromic                                                                             | Co <sup>3+</sup><br>Fe <sup>3+</sup><br>Mn <sup>3+</sup>                                                                                                                         | cobalt (III), cobaltic<br>iron (III), ferric<br>manganese (III), manganic                                                                                               |
| <b>Oxidation Number of 4<sup>+</sup></b> | Pb <sup>4+</sup>                                                                                                                                             | lead (IV), plumbic                                                                                                                          | Sn <sup>4+</sup>                                                                                                                                                                 | tin (IV), stannic                                                                                                                                                       |
| <b>Oxidation Number of 5<sup>+</sup></b> | V <sup>5+</sup>                                                                                                                                              | vanadium (V)                                                                                                                                | As <sup>5+</sup>                                                                                                                                                                 | arsenic (V), arsenic                                                                                                                                                    |

|                                          |                                                                                                                                                                                                                           |                                                                                            |                                                                                                                                                                                                                        |                                                                                                     |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Oxidation Number of 1<sup>-</sup></b> | C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> <sup>-</sup><br>Br <sup>-</sup><br>ClO <sub>3</sub> <sup>-</sup><br>ClO <sub>2</sub> <sup>-</sup><br>Cl <sup>-</sup><br>CN <sup>-</sup><br>F <sup>-</sup><br>OH <sup>-</sup> | acetate<br>bromide<br>chlorate<br>chlorite<br>chloride<br>cyanide<br>fluoride<br>hydroxide | H <sup>-</sup><br>ClO <sup>-</sup><br>I <sup>-</sup><br>NO <sub>3</sub> <sup>-</sup><br>NO <sub>2</sub> <sup>-</sup><br>ClO <sub>4</sub> <sup>-</sup><br>IO <sub>4</sub> <sup>-</sup><br>MnO <sub>4</sub> <sup>-</sup> | hydride<br>hypochlorite<br>iodide<br>nitrate<br>nitrite<br>perchlorate<br>periodate<br>permanganate |
| <b>Oxidation Number of 2<sup>-</sup></b> | CO <sub>3</sub> <sup>2-</sup><br>CrO <sub>4</sub> <sup>2-</sup><br>Cr <sub>2</sub> O <sub>7</sub> <sup>2-</sup><br>SiO <sub>3</sub> <sup>2-</sup><br>O <sup>2-</sup><br>C <sub>2</sub> O <sub>4</sub> <sup>2-</sup>       | carbonate<br>chromate<br>dichromate<br>silicate<br>oxide<br>oxalate                        | O <sub>2</sub> <sup>2-</sup><br>SO <sub>4</sub> <sup>2-</sup><br>SO <sub>3</sub> <sup>2-</sup><br>S <sup>2-</sup><br>S <sub>2</sub> O <sub>3</sub> <sup>2-</sup>                                                       | peroxide<br>sulfate<br>sulfite<br>sulfide<br>thiosulfate                                            |
| <b>Oxidation Number of -3</b>            | N <sup>3-</sup><br>PO <sub>4</sub> <sup>3-</sup><br>PO <sub>3</sub> <sup>3-</sup><br>P <sup>3-</sup>                                                                                                                      | nitride<br>phosphate<br>phosphite<br>phosphide                                             | BO <sub>3</sub> <sup>3-</sup><br>AsO <sub>4</sub> <sup>3-</sup><br>AsO <sub>3</sub> <sup>3-</sup>                                                                                                                      | borate<br>arsenate<br>arsenite                                                                      |