

# Naming Substances

## Discussion Study Sheet

Chem 192  
Cañada College

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Date: \_\_\_\_\_

**1.** Write the formula for each monatomic ion below, be sure to include the charge.

- |   |       |  |       |
|---|-------|--|-------|
| (a) Phosph <u>ide</u> ion                 | _____ | (e) Carb <u>ide</u> ion                  | _____ |
| (b) Magnesium ion                         | _____ | (f) Carbon ion                           | _____ |
| (c) Lead ion<br>(there are two—show both) | _____ | (g) Tin ion<br>(there are two—show both) | _____ |
| (d) Selen <u>ide</u> ion                  | _____ | (h) Aluminum ion                         | _____ |

**2.** Write the formula for each polyatomic ion below, be sure to include the charge.

- |                           |       |                           |       |
|---------------------------|-------|---------------------------|-------|
| (a) Sulf <u>ate</u> ion   | _____ | (e) Nitri <u>te</u> ion   | _____ |
| (b) Sulf <u>ite</u> ion   | _____ | (f) Carbon <u>ate</u> ion | _____ |
| (c) Phosph <u>ite</u> ion | _____ | (g) Ammonium ion          | _____ |
| (d) Phosph <u>ate</u> ion | _____ | (h) Cyanide ion           | _____ |

**3.** Write the formula in each box to show what compound would be formed with each anion listed across the top paired with each cation listed along the side.

	$F^-$	$ClO_4^-$	$AsO_4^{3-}$
$H^+$			
$B^{3+}$			
$Mg^{2+}$			
$NH_4^+$			

**4.** Predict whether each of the following statements describes an ionic or molecular substance. Write O for Ionic or M for molecular.

- \_\_\_\_\_ (a) The element Gold.
- \_\_\_\_\_ (b) The element Sulfur.
- \_\_\_\_\_ (c) Compound of Chlorine and Sodium.
- \_\_\_\_\_ (d) Compound of Chlorine and Phosphorus.
- \_\_\_\_\_ (e) A compound of Chlorine and Hydrogen.
- \_\_\_\_\_ (f) A compound made of Nitrogen and Oxygen.
- \_\_\_\_\_ (g) A compound made of Oxygen and Iron.
- \_\_\_\_\_ (h) A compound made of Sodium, Sulfur, and Oxygen.

**5.** For each of the substances in question 4, write the formula of the substance or write X if the problem does not provide enough information to know the formula.

- (a) \_\_\_\_\_ (c) \_\_\_\_\_ (e) \_\_\_\_\_ (g) \_\_\_\_\_
- (b) \_\_\_\_\_ (d) \_\_\_\_\_ (f) \_\_\_\_\_ (h) \_\_\_\_\_

**6.** Write the formula for each of the following.

- (a) Sodium Chloride \_\_\_\_\_ (e) Dinitrogen Pentoxide \_\_\_\_\_
- (b) Phosphorus Pentachloride \_\_\_\_\_ (f) Iron (III) Oxide \_\_\_\_\_
- (c) Phosphorus Trichloride \_\_\_\_\_ (g) Ferric Oxide \_\_\_\_\_
- (d) Hydrogen Chloride \_\_\_\_\_ (h) Aluminum Oxide \_\_\_\_\_
  
- (i) The compound formed from Sodium and Selenium \_\_\_\_\_
- (i) Made of Cupric ions and Chloride ions \_\_\_\_\_
- (i) Made of Cupric ions and Sulfide ions \_\_\_\_\_
- (i) Made of Cupric ions and Sulfite ions \_\_\_\_\_

**7.** Write the formula of each compound described below (most are acids). Use the symbol "(aq)" only when necessary!

\_\_\_\_\_ (a) The binary compound composed of hydrogen and fluorine.

\_\_\_\_\_ (b) The acid resulting from dissolving hydrogen fluoride in water.

\_\_\_\_\_ (c) Hydrogen Sulfide.

\_\_\_\_\_ (d) Hydrosulfuric Acid.

\_\_\_\_\_ (e) Sulfuric Acid.

\_\_\_\_\_ (f) Sulfurous Acid.

\_\_\_\_\_ (g) The acid formed from the Nitride ion.

\_\_\_\_\_ (h) The acid formed from the Nitrite ion.

\_\_\_\_\_ (h) The acid formed from the Nitrate ion.

**8.** Write the name of each compound described below (most are acids).

(a)  $H_2Se$  \_\_\_\_\_

(b)  $H_2Se(aq)$  \_\_\_\_\_

(c)  $H_3PO_4$  \_\_\_\_\_

(d)  $H_3PO_3$  \_\_\_\_\_

(e)  $HCl(aq)$  \_\_\_\_\_

(f)  $HClO_3$  \_\_\_\_\_

(g)  $HClO_2$  \_\_\_\_\_

(h)  $HClO$  \_\_\_\_\_

**8.** Write the name of each compound described below:

