Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_

**Summative 5.3 Study Guide**



**Chemical Bonding Concepts**

* Define and recognize cation vs anion, relate to metal vs nonmetal
* Distinguish between chemical formulas, ion symbols, polyatomic ions, and chemical nomenclature
* Determine ion charges using periodic table
* Know the 9 Polyatomic ions
* Apply rules to write ionic compound chemical formulas – cross over and down, roman numerals, simplifying, polyatomic ions.

**Review/Practice Questions**

1. Identify whether the following are made up of ionic (I) or covalent (C) or metallic (M) bonds

a. sodium chloride b. aluminum foil c. iron(II) oxide d. CH4

1. Identify if the following are anions or cations. Draw their Lewis Dot Diagram for the ion.

a. Na+ b. Cl- c. Mg+2

d. N-3 e. Fe+3 f. PO43-

1. Write the symbol and charge of the following ions:
2. Nitride ion d. Nitrate ion g. Manganese (II) ion
3. Calcium ion e. Bromide ion h. Carbonate ion
4. Iron (III) ion f. Zinc ion i. Phosphide ion
5. Write the chemical formula for each ionic compound.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Ion | P3- | CO32- | OH- | Phosphate Ion | Selenide ion |
| Al3+ |  |  |  |  |  |
| Nickel (I) Ion |  |  |  |  |  |

1. Write the chemical formula for the following ionic compounds:
2. ammonium nitrate i. hydrogen carbonate
3. calcium hydroxide j. silver oxide
4. sodium phosphide k. iron (III) sulfide

1. zinc bromide l. lithium oxalate
2. aluminum bicarbonate m. calcium cyanide
3. strontium fluoride n. ammonium nitride
4. copper (II) chloride o. manganese (II) selenide