**COSTAATT**

**CHEM 090**

**Lesson 7 – Worksheet**

**Bonding Basics**

**Section A: Complete the chart using a periodic table to help you.**

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**Answer these questions:**

An atom that gains one or more electrons will have a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** charge.

An atom that loses one or more electrons will have a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** charge.

An atom that gains or loses one or more electrons is called an **\_\_\_\_\_\_\_\_\_\_\_\_**.

A positive ion is called a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and a negative ion is called an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

**Section B: Ionic Bonds**

**What is an ionic bond?**

Atoms will transfer one or more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to another to form the bond.

Each atom is left with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ outer shell.

An ionic bond forms between a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ion with a positive charge and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ion with a negative charge.

**Example B1: Sodium + Chlorine Example B2: Magnesium + Iodine**

**Example B3: Potassium + Iodine Example B4: Sodium + Oxygen**

**Example B5: Calcium + Chlorine Example B6: Aluminum + Chlorine**

Challenge: What are some other ionic bonds that can be formed by the elements you see? Remember that you need a metal and a nonmetal to make an ionic bond. Write the chemical formula for the compound and its name.

**Section C: Covalent Bonds**

**What is a covalent bond?**

Atoms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ one or more electrons with each other to form the bond.

Each atom is left with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ outer shell.

A covalent bond forms between two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Example C1: Hydrogen + Chlorine Example C2: 2 Hydrogen + Oxygen**

**Example C3: Chlorine + Chlorine Example C4: Oxygen + Oxygen**

**Example C5: Carbon + 2 Oxygen Example C6: Carbon + 4 Hydrogen**

Challenge: What are some other covalent bonds that can be formed by the elements you see? Remember that you need two or more nonmetals to make a covalent bond. Write the chemical formula for the compound and its name if you know it.