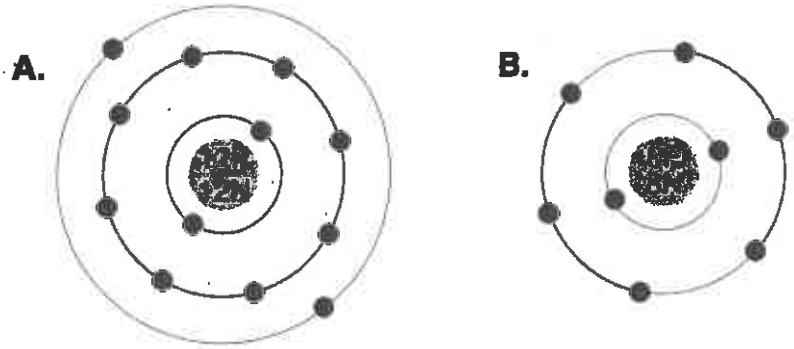
Name Date Class

SECTION 2 Reinforcement

# Types of Bonds

CHAPTER 18.2 REVIEW

**Directions:** *Study the diagram below. Write your answers to the questions in the spaces provided.*




1. If atom A loses electrons to atom B,
   a. how many electrons will atom A lose? _____
   b. how many electrons will atom B gain? _____
   c. what will be the oxidation number of atom A? _____
   d. what will be the oxidation number of atom B? _____
   e. what will be the total charge of the compound formed?

      _____

   f. what type of bond will form?

      _____

2. Explain why an element's oxidation number is related to the group on the periodic table to which it belongs.

   _____

   _____

   _____

**Directions:** *Complete the table comparing ionic compounds and covalent compounds.*

| Characteristic | Ionic compounds | Covalent compounds |
|---|---|---|
| 3. How the compound is formed | | |
| 4. Smallest particle | | |
| 5. Usual state at room temperature | | |

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Directed Reading for Content Mastery

# Section 1 ▪ Stability in Bonding
# Section 2 ▪ Types of Bonds

**Directions:** *In the blanks, write the terms from the word list that complete the definition. Words can be used more than once.*

| | | |
|---|---|---|
| positive | element(s) | compound(s) |
| energy level(s) | charged | number(s) |
| force(s) | atom(s) | ion(s) | electron(s) | negative |

1. A **chemical formula** tells what _____ make up a _____ and the exact _____ of atoms of each element in a unit of compound.
2. An atom is **chemically stable** when its outer _____ is completely filled with _____.
3. A **chemical bond** is a _____ that holds _____ together in a compound.
4. An _____ that has lost or gained _____ is called an **ion.**
5. An **ionic bond** is the _____ of attraction between the opposite charges of the _____ in an ionic _____.
6. The attraction that forms between _____ when they share _____ is known as a **covalent bond.**
7. A **polar molecule** has a slightly _____ end and a slightly _____ end.
8. A **nonpolar molecule** does not have oppositely _____ ends. Only atoms that are exactly alike can share their _____ equally.

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Chapter Test A

# Chemical Bonds

## I. Testing Concepts

**Directions:** *In the blank at the left, write the letter of the term that best completes each statement.*

_____ 1. Copper, sulfur, and oxygen are examples of _____.
a. elements b. compounds c. mixtures d. colloids

_____ 2. A chemical _____ tells what elements a compound contains and the exact number of the atoms of each element in a unit of that compound.
a. formula b. table c. dot diagram d. chart

_____ 3. $H_2O$ is also known as _____.
a. carbon b. mercury c. nickel d. water

_____ 4. A chemical _____ is the force that holds atoms together in a compound.
a. bond b. element c. compound d. formula

_____ 5. A charged particle is known as a(n) _____.
a. plasma b. gas c. ion d. neutron

_____ 6. The attraction that forms between atoms when they share electrons is known as a(n) _____ bond.
a. ionic b. covalent c. simple d. net

**Directions:** *Identify each statement as* **true** *or* **false**. *If the statement is false, change the underlined word(s) to make it true.*

_____ 7. Elements can unite chemically to form <u>compounds</u>.

_____ 8. A <u>covalent bond</u> is the force of attraction between the opposite charges of the ions in an ionic compound.

_____ 9. A neutral particle that forms as the result of electron sharing is called <u>an ion</u>.

_____ 10. A <u>nonpolar</u> molecule has a slightly positive end and a slightly negative end.

_____ 11. A <u>polar</u> molecule is one in which electrons are shared equally in bonds.

_____ 12. A <u>binary compound</u> is one that is composed of two elements.

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# Key Terms
# Chemical Bonds

**Directions:** *Match each term in Column I with its description in Column II. Write the letter of the correct term in the space provided.*

**Column I**

_____ 1. binary compound

_____ 2. chemically stable

_____ 3. nonpolar molecule

_____ 4. ion

_____ 5. ionic bond

_____ 6. polar molecule

_____ 7. oxidation number

_____ 8. chemical formula

_____ 9. covalent bond

_____ 10. hydrate

_____ 11. chemical bond

_____ 12. polyatomic ion

**Column II**

**a.** number that indicates how many electrons an atom must gain, lose, or share to become stable

**b.** shorthand that tells what elements a compound contains and the exact number of atoms of each element in a unit of the compound

**c.** positively or negatively charged, covalently bonded group of atoms

**d.** compound composed of two elements

**e.** describes an atom that has a full outermost energy level

**f.** molecule that has a slightly positive end and a slightly negative end

**g.** the attraction that forms between atoms when they share electrons

**h.** the force that holds atoms together in a compound

**i.** a compound that has water chemically attached to it

**j.** the force of attraction between the opposite charges of the ions in an ionic compound

**k.** molecule made of two identical atoms that share the electrons equally

**l.** a charged particle that has either more or fewer electrons than protons