RQ Chemical Bonds

Name: _____ **Date:** _____

1. Which is a unique characteristic of the bonding between metal atoms?

   A. Atoms require additional electrons to reach a stable octet.

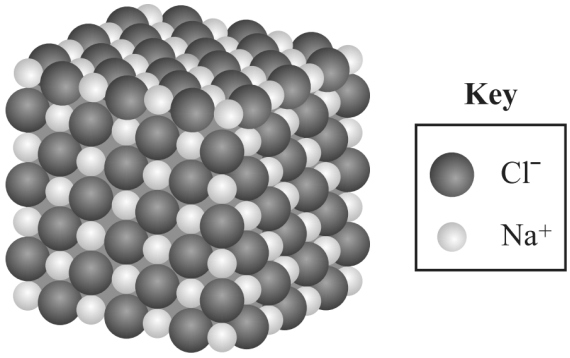
   B. Atoms must give away electrons to reach a stable octet.

   C. Atoms share valence electrons only with neighboring atoms to reach a stable octet.

   D. Delocalized electrons move among many atoms creating a sea of electrons.

2. The model below shows the crystalline structure of sodium chloride.

Sodium Chloride



Which statement *best* describes the behavior of the valence electrons as they form chemical bonds?

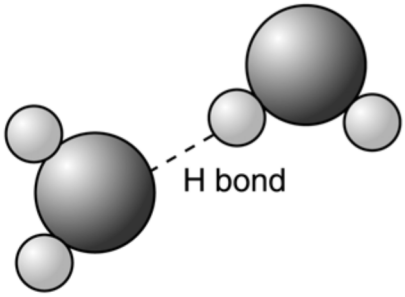
   A. Each sodium and chlorine atom shares one electron between both atoms.

   B. Each sodium and chlorine atom shares two electrons between both atoms.

   C. One electron from each sodium atom is transferred to each chlorine atom.

   D. Two electrons from each chlorine atom are transferred to each sodium atom.

3.



Water Molecules

The model illustrates hydrogen bonding found in water. This attraction between water molecules is the result of water's—

   A. ionic bonding.

   B. polar covalent bonding.

   C. positively charged atoms.

   D. negatively charged atoms.

4. How can two different nonmetals form a compound?

   A. by sharing protons

   B. by sharing electrons

   C. by transferring protons

   D. by transferring electrons

5. Which type of bond is responsible for atoms of pure gold to remain bonded?

   A. covalent B. hydrogen

   C. ionic D. metallic

6. In a water molecule, the oxygen atom has a slightly negative charge and the hydrogen atoms have a slightly positive charge.

This charge difference gives rise to which type of bonds between water molecules?

A. Ionic bonds

B. Hydrogen bonds

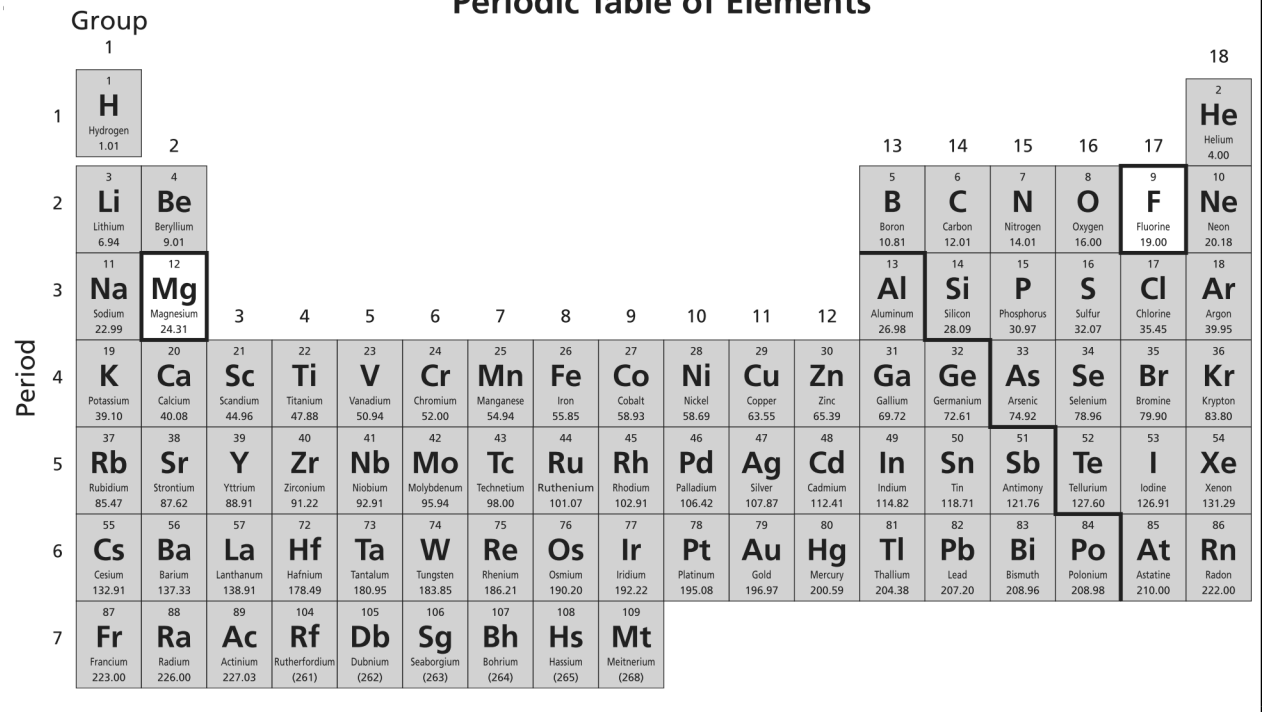
C. Single covalent bonds

D. Double covalent bonds

7. Which compound is *most likely* formed using covalent bonds?

A. CO_2 B. K_2O C. KBr D. $CaBr_2$

8.



Leroy combines magnesium (Mg) and fluorine (F).

Based on the periodic table, which statement describes the interaction of these two elements?

A. Mg is a metal and F is a nonmetal that forms an ionic bond.

B. Mg is a nonmetal and F is a metal that forms an ionic bond.

C. Mg is a metal and F is a metal that forms a covalent bond.

D. Mg is a metalloid and F is a nonmetal that forms a covalent bond.

9. Which of the following occurs in an ionic bond?

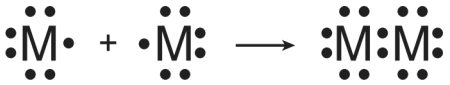
A. Two ions share protons.

B. Two ions share electrons.

C. Similarly charged ions attract.

D. Oppositely charged ions attract.

10. The illustration below shows two atoms of a fictitious element (M) forming a diatomic molecule.



What type of bonding occurs between these two atoms?

A. covalent

B. ionic

C. nuclear

D. polar