Name Date Class

Note-taking Worksheet

Chemical Bonds

Section 1 Stability in Bonding

A. Some elements combine chemically and no longer have the same _____ they did before forming a compound.

B. A(n) _____ is composed of symbols and subscripts indicating the number of atoms of an element in a compound.

C. Atoms form compounds when the compound is more _____ than the separate atoms.

1. Noble gases are more _____ than other elements because they have a complete outer energy level.

2. Elements that do not have full outer energy levels are more stable in _____.

3. Atoms can lose, gain, or _____ electrons to get a stable outer energy level.

4. A(n) _____ is the force that holds atoms together in a compound.

Section 2 Types of Bonds

A. A(n) _____ is a charged particle because it has more or fewer electrons than protons.

1. When an atom _____ an electron, it becomes a positively charged ion; a superscript indicates the charge.

2. When an atom _____ an electron, it becomes a negatively charged ion.

B. An ionic compound is held together by the _____—the force of attraction between opposite charges of the ions.

1. The result of this bond is a(n) _____ compound.

2. The sum of the charges on the ions in a unit of the compound is _____.

C. _____ are neutral particles formed as a result of sharing electrons.

1. A _____ is the force of attraction between atoms sharing electrons.

2. Atoms can form double or triple _____ depending on whether they share two or three pairs of electrons.

3. Electrons shared in a molecule are held _____ to the atoms with the larger nucleus.

Meeting Individual Needs

Note-taking Worksheet (continued)

4. A(n) _____ **molecule** has one end that is slightly negative and one end that is slightly positive although the overall molecule is neutral.
5. In a(n) _____ **molecule,** electrons are shared equally.

Section 3 Writing Formulas and Naming Compounds

A. Chemists use _____ from the periodic table to write formulas for compounds.

B. _____—composed of two elements

1. _____—how many electrons an atom has gained, lost, or shared to become stable
2. Use oxidation numbers and their least common multiples to write _____.
   - **a.** When writing formulas, remember that the compound is _____.
   - **b.** A formula must have the correct number of positive and negative ions so the charges _____.
3. Use the name of the first element, the root name of the second element, and the suffix *–ide* to write the _____ of a binary ionic compound.

C. _____—positively or negatively charged, covalently bonded group of atoms

1. The compound contains _____ or more elements.
2. To write names, write the name of the _____ ion first; then write the name of the _____ ion.
3. To write _____, use the oxidation numbers, their least common multiple, and put parentheses around the polyatomic ion before adding a subscript.

D. _____—compound with water chemically attached to its ions

E. Name binary covalent compounds by using _____ to indicate how many atoms of each element are in the compound.