**Name: Period:**

**PSB Unit 2 – Chemical Bonding**

**Stability in Bonding Worksheet**

**Directions:** *Each statement below contains a pair of terms or phrases in parentheses. Circle the term or phrase
that makes each statement true.*

1. The properties of a compound are (the same as, different from) the properties of the elements that make up the compound.

2. Na and Cl are chemical (symbols, formulas).

3. NaCl and NaOH are chemical (symbols, formulas).

4. In the formula H2O, the number 2 is a (subscript, superscript).

5. The number 2 in the formula H2O tells you that each unit of this compound contains two
(hydrogen, oxygen) atoms.

6. If a symbol in a chemical formula does not have a subscript after it, a unit of that compound contains
(no atoms, one atom) of that element.

7. The total number of atoms in Fe2O3 is (two, five, six).

8. There are (three, seven, ten) different elements in H2SO4.

9. An atom is chemically stable if its outer energy level (is filled with, contains no) electrons.

10. For atoms of most noble gases and most other elements, the outer energy level is full when it has
(three, eight) electrons.

11. The noble gases do not readily form compounds because they (are, are not) chemically stable.

12. A chemical bond is a (force, chemical) that holds atoms together in a compound.

13. Chemical bonds form when atoms lose, gain, or (share, multiply) electrons.

14. **Directions:** *Complete the table below by using the formula of each compound to identify the elements that each compound contains and the number of atoms of each of these elements in a unit of the compound. The first formula has been done for you as an example.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Formula** | **Element 1** | **Element 2** | **Element 3** |
| H2O | 2 hydrogen | 1 oxygen |  |
| NaOH |  |  |  |
| NaCl |  |  |  |
| NH3 |  |  |  |
| Mg(OH)2 |  |  |  |
| SiO2 |  |  |  |
| H2SO4 |  |  |  |

15. Fill in the correct number of valence electrons for each element.

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **Valence Electrons** | **Element** | **Valence Electrons** |
| Li |  | Ca |  |
| He |  | F |  |
| Si |  | Ar |  |
| S |  | K |  |

16. Draw Electron Dot Diagrams for the elements listed.

1. Hydrogen e. Aluminum
2. Neon f. Fluorine
3. Sodium g. Argon
4. Calcium h. Potassium

17. Why do sodium and potassium have the same number of dots in their electron dot diagrams? What does this tell you about the chemistry of these two elements?