Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_\_\_

**Bonding Alternate Review**

1. A. How is the VSEPR theory used to classify molecules?

B. What molecular geometry would be expected for F2 and HF?

1. Name the following molecular compounds, or write the formula if given the name.
2. P4O6
3. SiO2
4. NO
5. XeO3
6. tetraphosphorus tribromide
7. silicon tetrachloride
8. dinitrogen tetroxide
9. nitrogen trichloride

3. A. What are intermolecular forces?

B. In general, how do these forces compare in strength with those in ionic and metallic bonding?

C. Where are the strongest intermolecular forces found?

4. A. What is hydrogen bonding?

B. What accounts for its extraordinary strength?

5. What are London dispersion forces?

6. Determine the electronegativity difference, the probable bond type, and the more electronegative atom with respect to the bonds formed between the following pairs of atoms:

A. H and I

B. S and O

C. K and Br

D. Si and Cl

E. H and F

F. Se and S

G. C and H

7. Draw Lewis structures for each of the following molecules. Then determine the molecular geometry and decide whether the molecule is polar or nonpolar.

A. contains one C and four F atoms

B. contains two H and one Se atom

C. contains one Si and four Br atoms

1. contains one Si and four Br atoms
2. contains one C, one Cl, and three H atoms

8. Draw Lewis structures for each of the following polyatomic ions. Show resonance structures, if they exist.

A. OH⁻

B. H₃C₂O₂⁻

C. Br0₃⁻

9. What types of atoms tend to form the following types of bonding?

A. ionic

B. covalent

C. metallic

10. Draw the three resonance structures for sulfur trioxide, SO3

11. Draw a Lewis structure for each of the following polyatomic ions and determine their molecular geometries.

A. NO₂⁻

B. NO₃⁻

C. NH₄⁺

12. What are five characteristics of ionic bonding?

13. What are five characteristics of covalent bonding?

14. What are five characteristics of metallic bonding?