**Test #5, General Chemistry Covalent Exam Review**

1) Why do I refer to nonpolar covalent compounds as being like Tylenol capsules, but polar covalent compounds as being like Tylenol that’s had orange juice poured on it? In what way is this related to the structure of each? (6 pt)

2) What does the shape of a molecule have to do with its intermolecular force? (3 pt)

3) Why are covalent compounds generally less brittle than ionic compounds? (3 pt)

4) Explain how van der Waals forces work. (3 pt)

5) Why do polar molecules tend to have high melting and boiling points than nonpolar molecules? (3 pt)

For each of the following compounds, indicate the following:

a) Chemical name of compound. (1 pt each)

b) Lewis structure of compound. (3 pt each)

c) Shape of compound. (1 pt each)

d) Bond angle of the compound. (1 pt each)

e) Indicate whether the molecule is polar. (1 pt)

f) Indicate the strongest intermolecular force in each compound. (1 pt)

6) H2CO Lewis structure

* chemical name: Don’t worry about this one
* shape: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* bond angle: \_\_\_\_\_\_\_\_\_\_
* is it polar? (yes/no): \_\_\_\_\_\_\_\_\_\_
* strongest intermolecular force: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7) SiSe2 Lewis structure

* chemical name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* shape: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* bond angle: \_\_\_\_\_\_\_\_\_\_
* is it polar? (yes/no): \_\_\_\_\_\_\_\_\_\_
* strongest intermolecular force: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) NBr3 Lewis structure

* chemical name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* shape: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* bond angle: \_\_\_\_\_\_\_\_\_\_
* is it polar? (yes/no): \_\_\_\_\_\_\_\_\_\_
* strongest intermolecular force: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_