**VSEPR and Polarity Quiz – Honors Chemistry**

1. For the carbonate ion…
2. Draw the Lewis structure (8 pt)
3. Draw a dipole arrow in the direction of greater partial negative charge. If the molecule is nonpolar, write “nonpolar” next to the Lewis structure. (3 pt)
4. Indicate the bond angle around the central atom in this ion (3 pt) \_\_\_\_\_\_\_\_\_\_\_
5. Indicate the shape of this ion (2 pt) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Nitrogen trifluoride has a boiling point approximately 150 degrees lower than that of nitrogen trichloride. Given your knowledge of how polarity affects the properties of chemical compounds, does this make sense? **Explain** your answer. (6 pt)
7. The F-N-F bond angles in nitrogen trifluoride are 107.5 degrees, while the bond angles in carbon tetrafluoride are 109.5 degrees. Use the Lewis structures of these molecules and your knowledge of VSEPR to explain why this is. (6 pt)