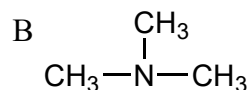
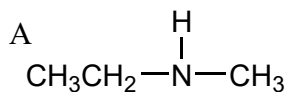
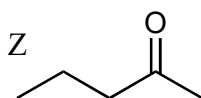
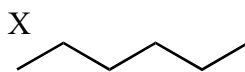


2A. (10 pts) **NO EXPLAIN = NO CREDIT**

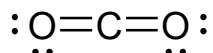
a) Which compound (A or B or neither) has the higher boiling point? Explain briefly.



b) Which compound (X or Y or Z) has the highest boiling point, and which has the lowest boiling point? Explain briefly.



2B. (4 pts) Carbon dioxide is nonpolar, yet it dissolves in water because of hydrogen-bonding interactions. In the space below, draw a water molecule and illustrate how it can form a hydrogen bond with  $\text{CO}_2$ .



2C. (8 pts)

- 1) **Complete the Lewis structure** for the following molecule (all of the sigma bonds are shown; do not add any additional atoms). Draw only the best resonance form.
- 2) **Provide a 3-D sketch** for this molecule (use overlapping *p* orbitals to represent pi bonds). Remember to locate the maximum number of atoms in the plane of the page.

