Unit 2 – Chapters 8,9: Bonding & Hybridization **Name _____**

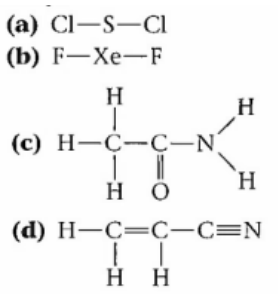
Assignment #3: VSEPR, Bond Angles, Geometries **Period _____**

1) Predict the molecular structure (including bond angles) for each of the following.
   a. ICl_5
   b. $XeCl_4$
   c. $SeCl_6$

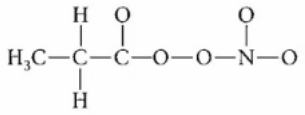
2) Which of the molecules in the above molecules have dipole moments (are polar)?

3) Predict the geometry in each of the below species:
   a. ClF_2^-
   b. SeF_5Br
   c. $SeCl_4$
   d. IO_4^-

4) Give all the ideal bond angles (109.5^0, 120^0, or 180^0) in the following molecules and ions. (The skeleton does not imply geometry.)

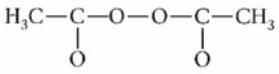


5) Peroxypropionyl nitrate (PPN) is an eye irritant found in smog. Its skeleton structure is:



a. Draw the Lewis structure of PPN.
b. Indicate all the bond angles.

6) An objectionable component of smoggy air is acetylperoxide, with the skeleton structure:



a. Draw the Lewis structure of this compound.

b. Indicate all the bond angles.