

**CHM 201**  
**Some Chapter 1 and 2 problems**

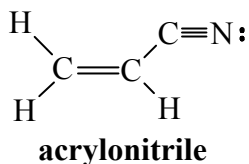
1. Propose reasonable Lewis-dot structures for the following. There may be more than one correct answer.

- a)  $\text{H}_2\text{CO}_2$       b)  $\text{HNO}_3$       c)  $\text{N}_2\text{O}$   
d)  $\text{NH}_3\text{O}$       e)  $\text{C}_2\text{H}_3\text{ClO}$       f)  $\text{C}_2\text{H}_5\text{NO}$

2. Identify the hybridization of each atom other than H and Cl in the compounds above.

3. Propose a structure of a hydrocarbon with 4 carbons that has 2  $\text{sp}^2 - \text{sp}$   $\sigma$  bonds.

4. Draw an orbital depiction of acrylonitrile. Label all bonds ( $\pi$  or  $\sigma$ ) and orbitals (e.g.  $\text{sp}^3$ ).



5. Determine the molecular formula of the following compounds:

