Chem 21 - Structure and Bonding Review

1. Draw structures of each of the following:
   a. Two isomers of C3H4BrCl
   b. Two isomers of C2H7N
   c. Four isomers of C3H6O

2. Complete each of the following molecules by adding formal charges. What is the relationship between each pair of compounds? Which species in each pair is more stable and why?

3. Give the hybridization of the orbitals used by each of the carbon atoms in the structure below and describe the bonding for all of the bonds between carbon atoms.

4. Which of the following molecules is/are polar (has a molecular dipole moment) and how can you tell? (Electronegativity values: C-2.5, H-2.1, N-3.0, O-3.5, Cl-3.0)