1. Give the hybridization of the indicated atoms for a and b and the angles for c and d.

   a) ![Structure](image1)
   b) ![Structure](image2)

   c) What is the C-C-C angle in a?
   d) What is the C-C-Br angle in b?

2. Draw four isomers for the formula C₄H₁₀O. Use Lewis, condensed or skeletal structures.

   ![Structure](image3)

3. Write Lewis structures of the two best resonance contributors for the following. Use lines for a pair of bonding electrons. Show lone pairs and formal charges.

   phosphoric acid
   \[
   \text{H}_3\text{PO}_4
   \]

   \[
   \text{[HC(NH}_2\text{)₂]}^+
   \]

4. Write the product(s) of the following reaction shown by the electron-pushing arrow. Don't forget formal charges if needed. Put in the lone pairs.

   ![Reaction](image4)

5. Draw structures (Lewis, condensed or skeletal) of the following:

   a) a six-membered ring with a pi bond in it
   b) an all carbon and hydrogen compound with two triple bonds
   c) C₂H₂O
   d) C₂H₅N