1. (5 pts) The structure of heroin is shown below. Circle and label all the functional groups in heroin.

   ![Heroin Structure]

   - Aromatic Ring
   - Ester
   - Ether
   - Amine
   - Alkene

2. (5 pts) Circle the compound below that has the highest boiling point. Then put a rectangle around the compound that is the least soluble in water. Briefly explain your answers.

   ![Compounds]

   - CH$_3$CH$_2$OCH$_2$CH$_3$
   - CH$_3$CH$_2$CH$_2$OH
   - CH$_3$CH$_2$CH$_2$CH$_2$Cl

   The center molecule can hydrogen bond with itself. Since hydrogen bonds are one of the strongest intermolecular forces, it takes more energy to break the molecules apart, and hence it has the highest boiling point.

   The first two molecules can hydrogen bond with the water, and consequently they are more soluble in water than the last molecule which cannot hydrogen bond with the water.