

CHEM106 Quiz 1

Please show all equations, all substitutions, all units, and all work to receive any credit

1. Draw the Lewis structure of two methanol molecules (CH_3OH) and clearly show the orientation of the two molecules with respect to one another that shows their greatest attraction for each other. Show all atoms, bonds, and lone electron pairs for both molecules; clearly label appropriate interactions between them.

2. Viscosity is the resistance to flow (think cold syrup). Compare the viscosity of butane (C_4H_{10}) with that of octane (C_8H_{18}). Clearly support your answer with sound reasoning and with appropriate diagrams.

3. Ethanol has a log P value of -0.235.
 - a. Define what P is and calculate the value of P for ethanol.

 - b. Using ethanol's molecular properties, clearly explain why it has this magnitude of P.

 - c. For an ethanol concentration of 1 mM in the water phase, calculate the concentration of ethanol in the 1-octanol phase.

2. Compare the melting points of unsaturated and saturated triglycerides; fully support your answer.