

CHEM106 Quiz 6

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

1. Draw the skeletal structure for a steroid molecule and fully itemize and explain the sequence of steps involved in the mechanism of actions for steroids.
2. Outline the mechanism of action through which aspirin inhibits the COX enzyme. Be very specific and discuss the mechanism of action that makes aspirin is a different type of COX inhibitor than the other NSAIDs.
3. At body temperature, an enzyme lowers the activation energy for a certain reaction from 75 kJ mole to 55 kJ/mole. Determine how many times faster the catalyzed reaction occurs.
4. An enzyme catalyzed reaction with a specific substrate has a Michaelis constant of 6.5 mM. Determine the fraction of enzyme active sites that are occupied with this substrate when the substrate concentration is 10 mM. Explain whether your answer makes sense and, more importantly, why.