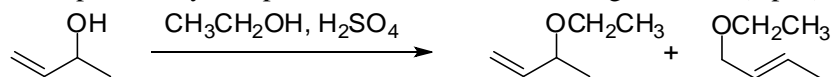
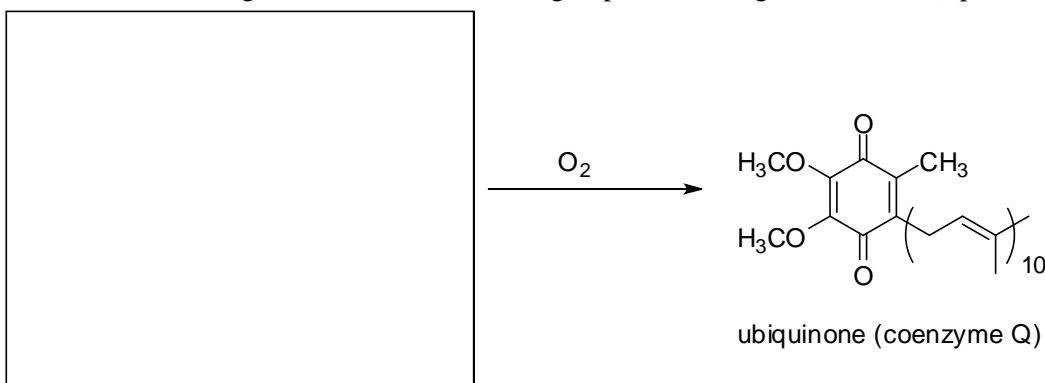


1. Circle the answer that best explains why two products form in the following reaction. (2 pts.)



- A stabilized allylic carbocation intermediate forms that can be attacked at either end of the allylic system.
- When dealing with an allylic system, the ethanol prefers to react at the least substituted carbon, but will sometimes add where the OH group formally bonded.
- The H_2SO_4 is a very strong acid and it promotes alkene isomerization with an allylic resonance form before the $\text{CH}_3\text{CH}_2\text{O}^-$ anion reacts.
- The secondary alcohol group can react at the primary alcohol or it can be displaced by the bisulfate anion to move the ether group to a less sterically crowded position at the other end of the allylic system.
- The H_2SO_4 and $\text{CH}_3\text{CH}_2\text{OH}$ react to form a primary carbocation which is so reactive that it has an affinity for the allylic alcohol equal to Kim Kardashian's for money.

2. Provide the starting material for the following important biological reaction. (2 pts.)



3. Provide the products of the following reactions.

