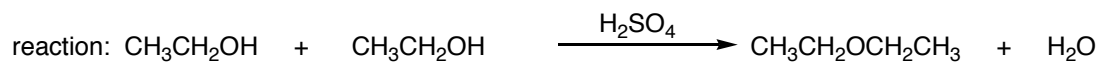


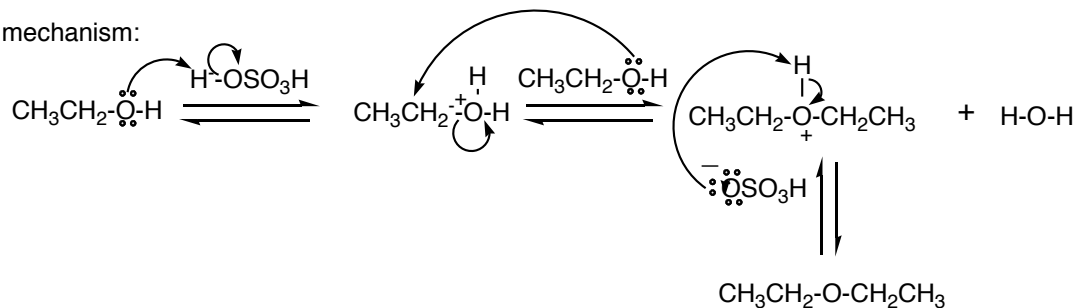
MAD ORG. CHEM. MIN. # 11

LAST NAME _____ FIRST NAME _____
 SS# _____ CIRCLE CLASS TIME: 10AM 5:30PM

1. An industrial synthesis of diethyl ether involves the high temperature, acid catalyzed condensation of two ethanol molecules. This process is shown below. Draw all of the transition states and label the intermediates (I, II, III, etc.).



mechanism:



Assuming that this process is exothermic overall, and that step 2 is the rate determining step and step 1 is faster than step 3, draw an energy profile for this process.