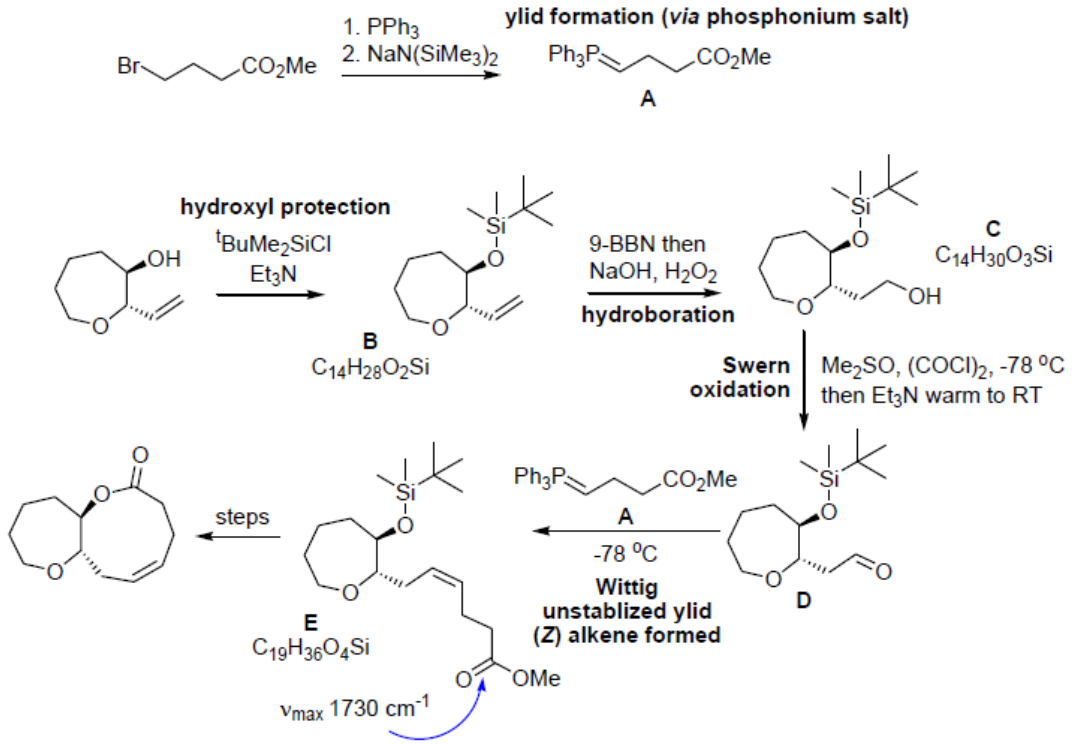
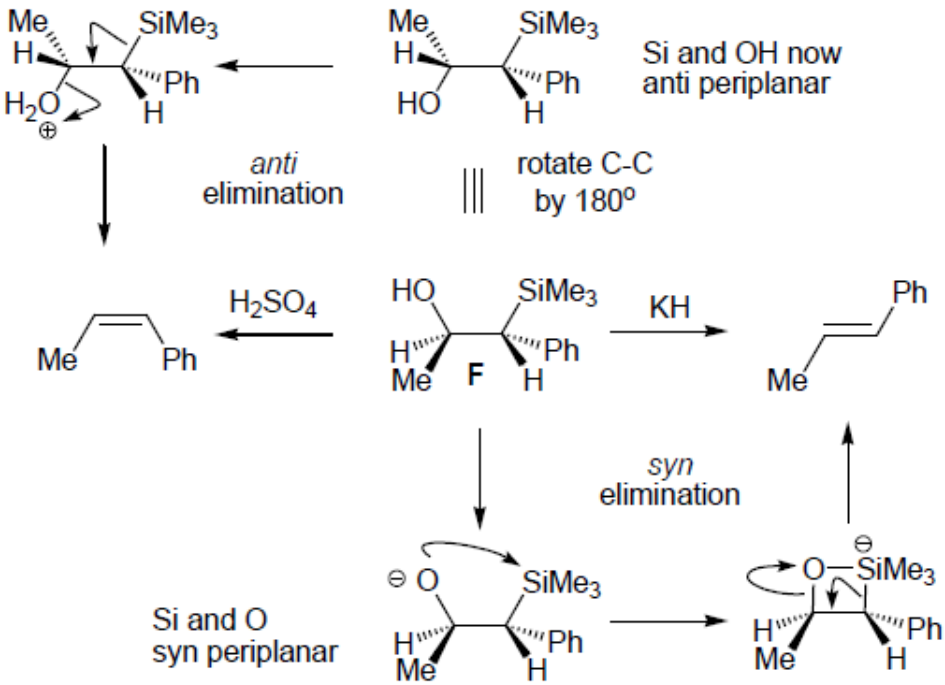
Name Last Name ID number

1.Answer part (a), (b) and (c)

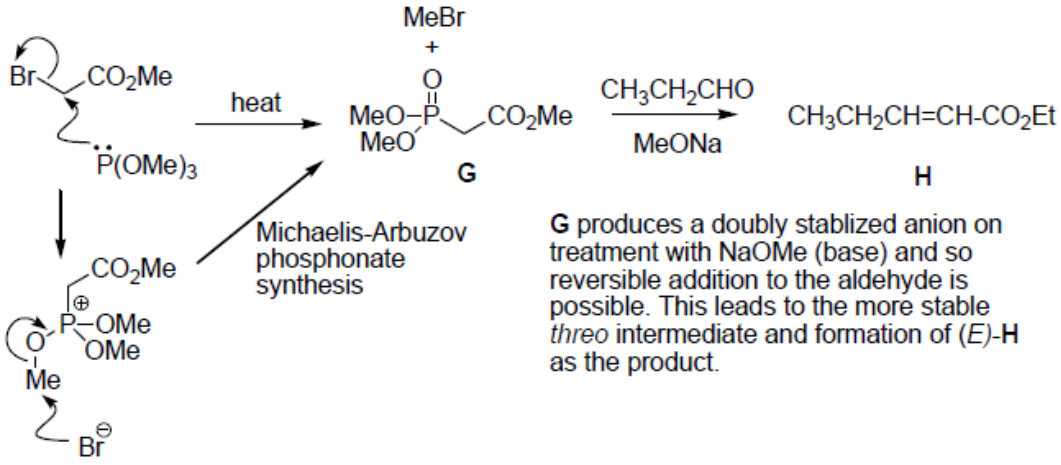
a) Consider the scheme below, which describes a route to a fragment of the marine natural product brevetoxin, and then work out the structures of **A**, **B**, **C** and **E**.



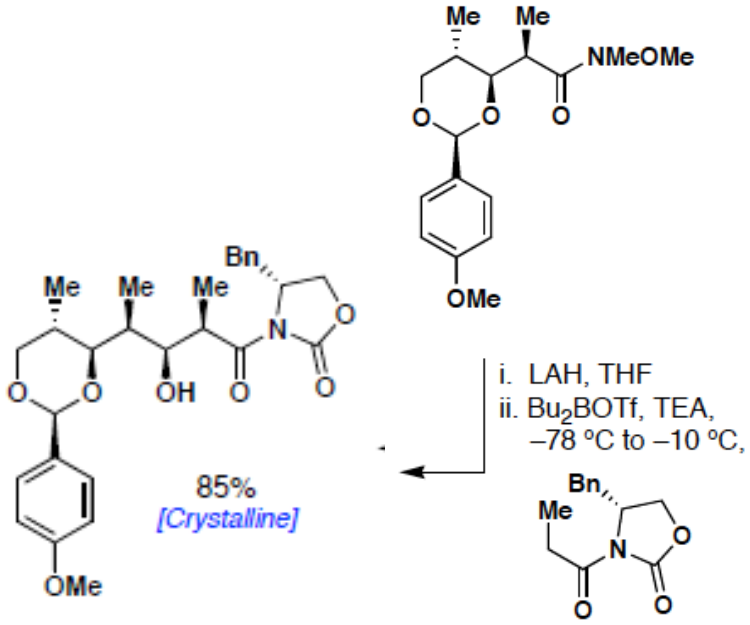
(b) Hydroxysilane **F** produces isomeric alkenes depending on whether treated with acid or base. Using reaction mechanisms account for this difference in behaviour.



(c) Using a reaction mechanism show how phosphonate G can be made from the reagents given. Predict, with a brief explanation, the stereochemistry of the carbon-carbon double bond in H.



2. Provide the missing reagents or products for the following synthetic steps. Use as many synthetic steps as you feel are required. Pay particular attention to the stereochemistry.



3. Write out the intermediates and the product of the sequence below