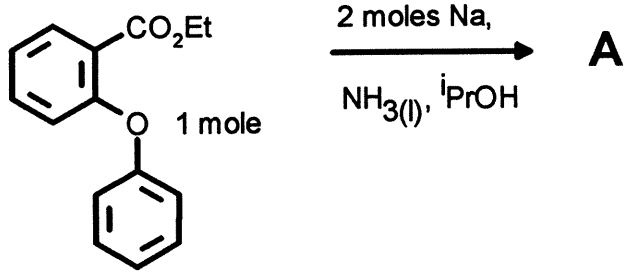
**University of Windsor**
**Department of Chemistry and Biochemistry**

**Chemistry 59-331/333** **Apr. 4, 1997**
**Third Test** **Time: 50 minutes**

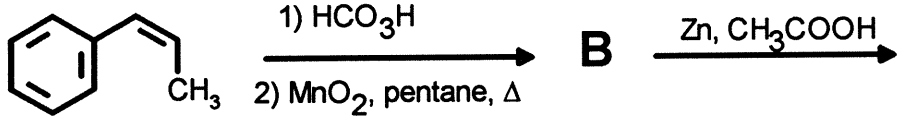
**Answer all questions in the exam booklet**

**1.** Indicate the structure of the major product from each of the following reactions. Include stereochemistry where relevant. Mechanisms are not necessary, but showing your work may be a help (**5 marks for each letter, 40 marks total**).

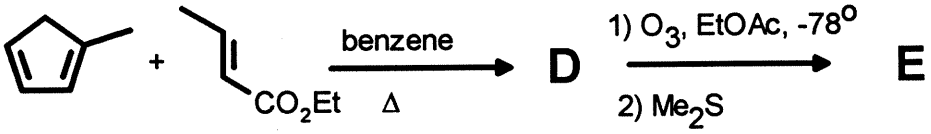
**a)**



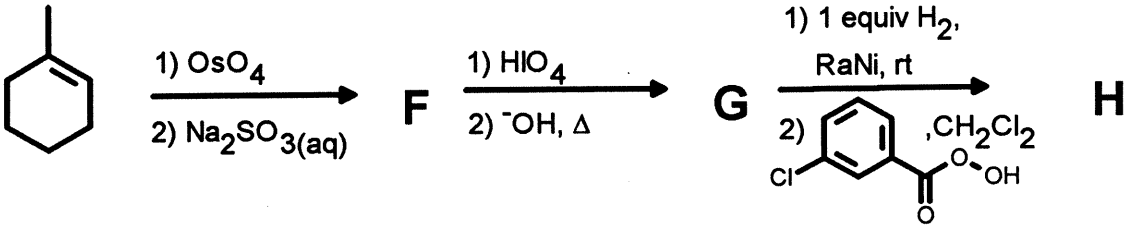

**b)**




**c)**

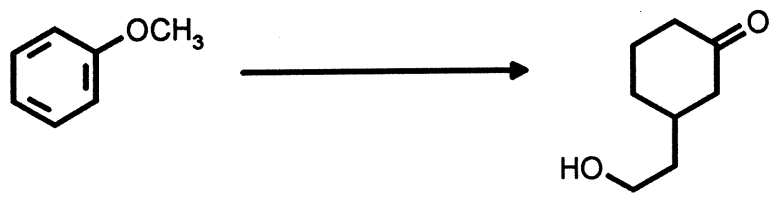



**d)**

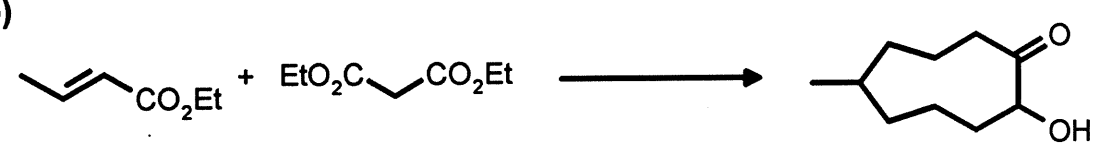



**2.** Show by equation how you could prepare the products illustrated below from the given starting materials. You may use any other reagents which you deem fit. Show all reagents, conditions, and intermediates which could be isolated. Mechanisms are not necessary, but may be a help (**10 marks each, 40 marks total**).

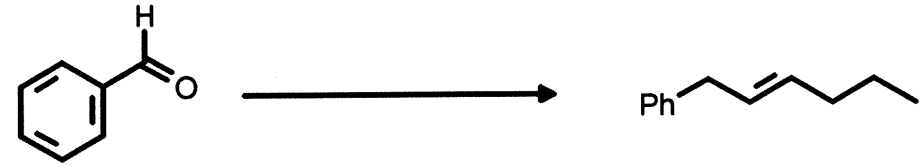
**a)**



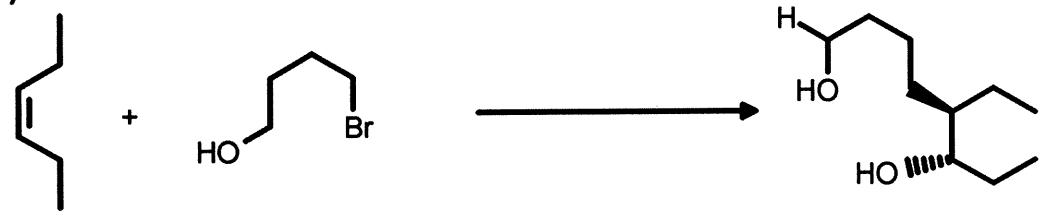

**b)**




**c)**




**d)**




Hint: Mild aqueous acid treatment at room temperature will *not* cause primary or secondary alcohols to eliminate

**Bonus:** A reaction which is an alternative to one of the major reactions which we have studied in this section involves α-silyl carbanions. Predict what is formed in the following transformation and *how it is formed*. Notice the two possible alternatives for the final step.