

# Organic Chemistry: CHEM 231B

Whittier College

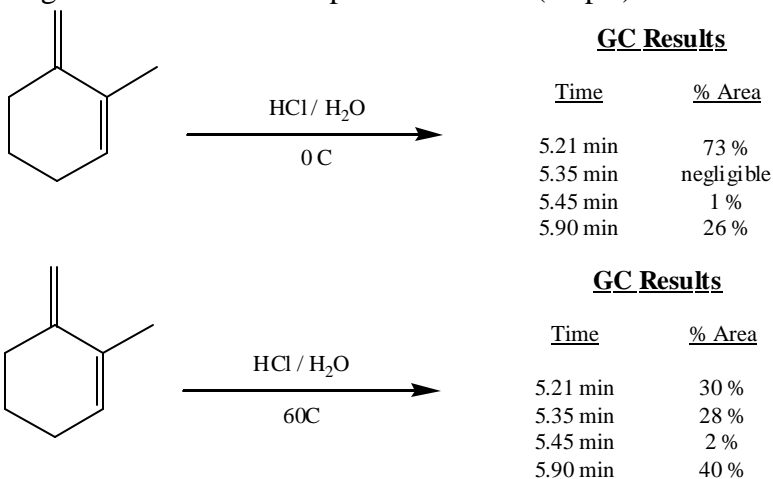
Spring 2004

## Problem Set #3

Due Thursday 4/8/2004 @ 5:00 p.m.

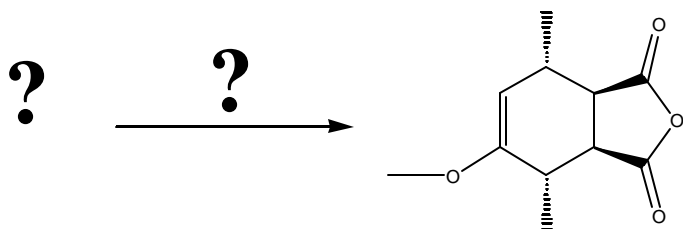
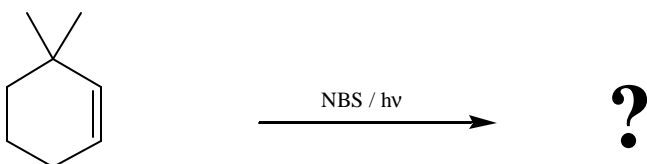
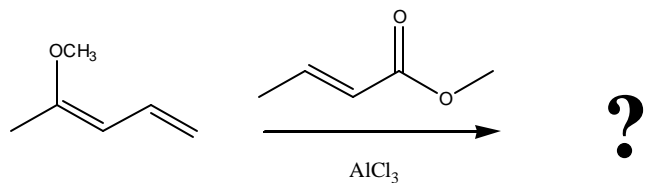
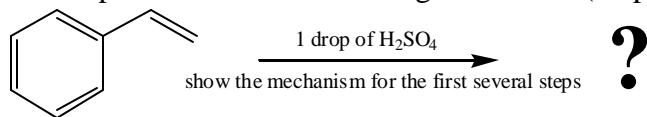
40 pts

1. Consider the following two reactions and experimental data (12 pts):

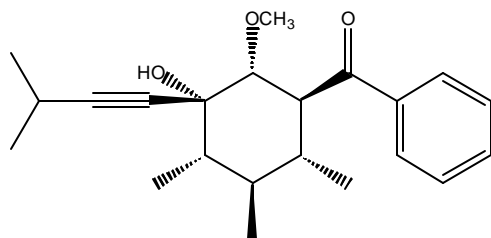


- 1a. What are the identities of all of the products? (4 pts)  
1b. Using mechanisms, structures, transition states and energy diagrams, explain the experimental results? (8 pts)

2. Predict products for the following reactions: (12 pts)



3. Conduct a retrosynthetic analysis for the problem below. Investigate more than one method to make the desired molecules; the various methods do not have to be completely correct (they need to be real reactions but do not have to go all the way to the desired starting material), but rather should show that you have thought of alternative routes. Choosing the best route, show the synthetic scheme you would use to make the desired molecule. (12 pts)



From any compound with seven carbons or less

4. Construct the molecular orbital picture for propenyl cation ( $\text{CH}_2\text{CHCH}_2^+$ ). Make sure you pay attention to the rules for constructing molecular orbitals. (4 pts)