

# Organic Chemistry: CHEM 331

Fall 2000 - Whittier College

## Optional Problem Set #6

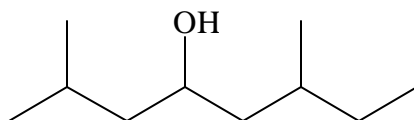
September 6, 2001

1. Answer the following problems from "Organic Chemistry" by Bruice:

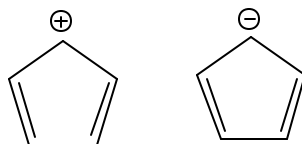
Chapter 6: 15, 19, 20, 24

Chapter 7: 11, 25, 30

2. Perform a retrosynthetic analysis on the following compound ending with any hydrocarbons (alkane, alkene or alkyne) of 4 carbons or less.

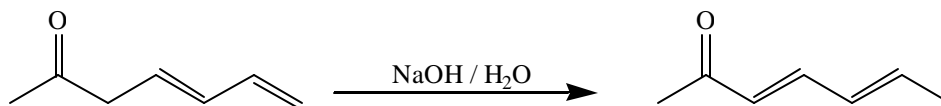


3. Draw the molecular orbitals for the following two molecules: (hint: combine the molecular orbitals of an allyl cation or anion with a pi bond)



Based on the molecular orbital, provide a reason why one is more stable than the other.

4. Consider the following reaction and provide a mechanism for the conversion of starting material to product.



Explain why this reaction occurs.