CHEM 8410_6410_4410 – Organic Synthesis

Mid-Term Exam 3

Time: 10:00 am – 11:15 am
Date: April 23, 2015
Room: BO 2059

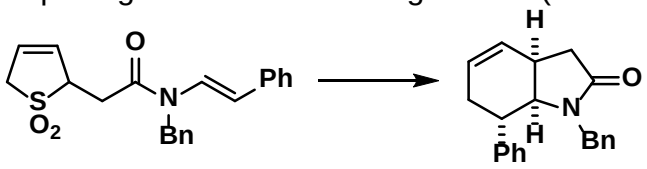
100 Points - Total

1. **Problem:** Please provide mechanisms for the following named reactions: (**25 PTS**)
    a. Fischer Oxazole Synthesis
    b. Feist-Benary Synthesis
    c. Emmert Reaction
    d. Dieckmann Reaction
    e. Edman Degradation

Answer(s):

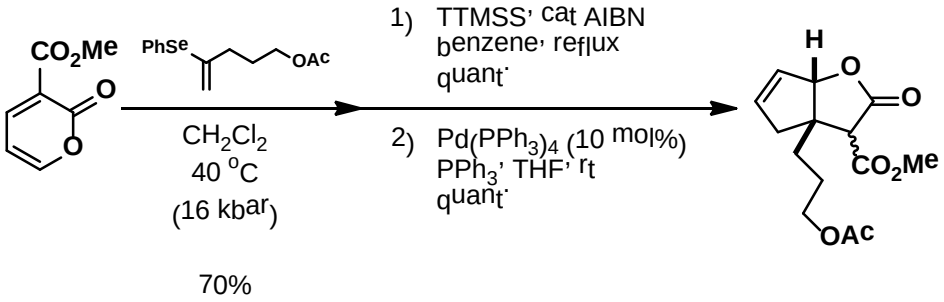
Use back of sheet if need be →→→→→→→→→→→→→→→→→→→→→→→→→→→→

2. **Problem:** This reaction requires you to draw the mechanism as you have done previously when completing the Hmwrk #4 assignment. (**20 PTS**)



Answer:

3. **Problem:** Work by the Marko et al. group has accumulated towards a complex 5,5-fused ring system as shown. Provide all the mechanisms for the transformations leading to the target molecule. Show the structure of AIBN and make sure the correct arrows are used for your mechanism (homolytic vs heterolytic). (**20 Points**).

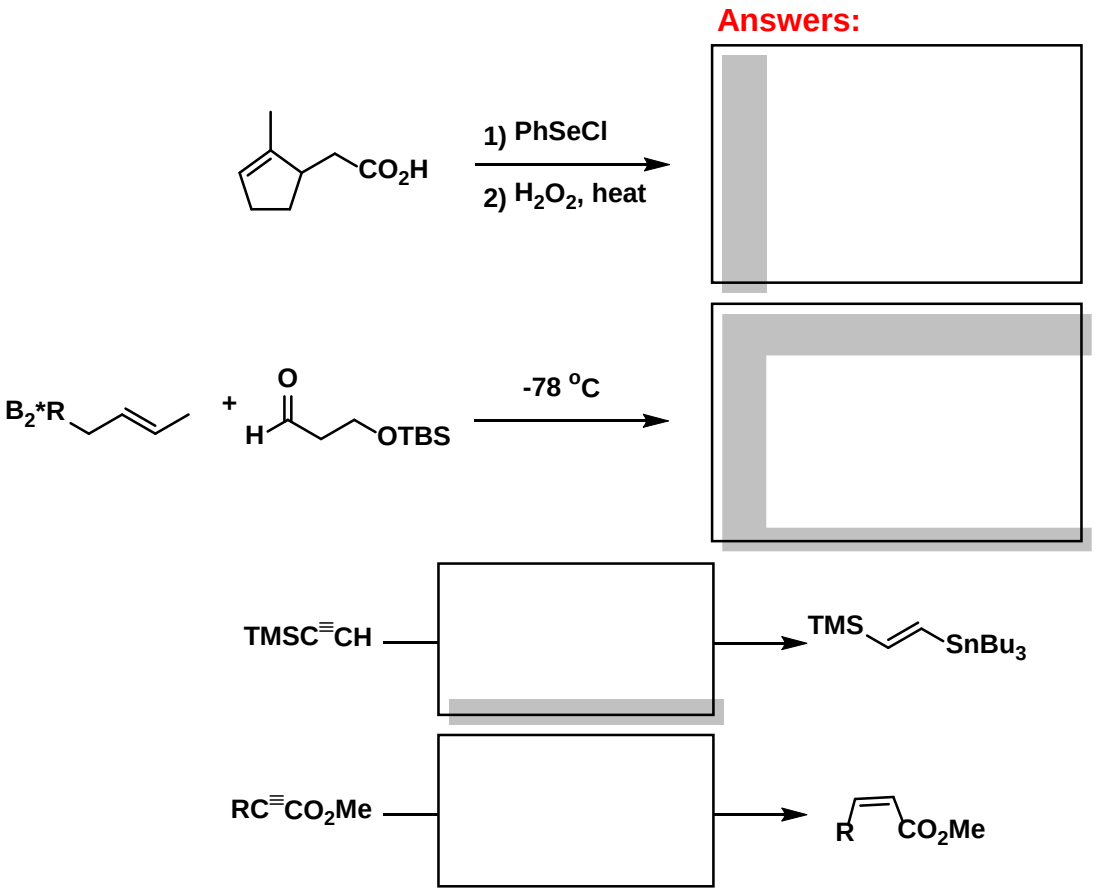


I.E. Marko *et al. Org. Biomol. Chem.* **2006**, *4*, 1464.

Answer:

4. **Problem:** Provide the **major** product for each of the following transformations. Be sure to indicate stereochemistry, if appropriate? (**20 Points**)

Answers:



5. **Problem:** Fill in the blanks. There may be more than one reagent necessary to carry out some of the indicated transformations. (**15 PTS**)