



CHEM 8410_6410_4410 – Organic Synthesis

THE UNIVERSITY OF
TOLEDO
1872

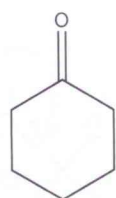
Instructor: Prof. Andreana
Room #: BO 2059

Quiz #3 of 5 10 PTS

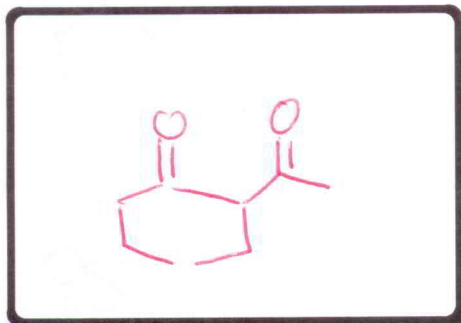
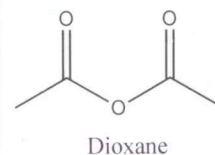
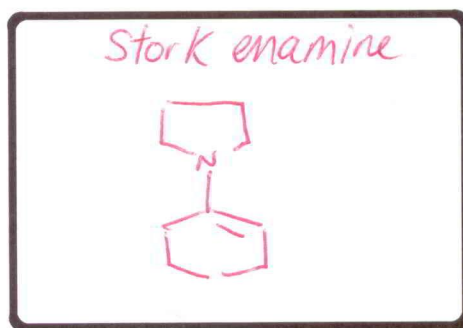
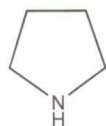
Your Name: _____

Student Number: _____

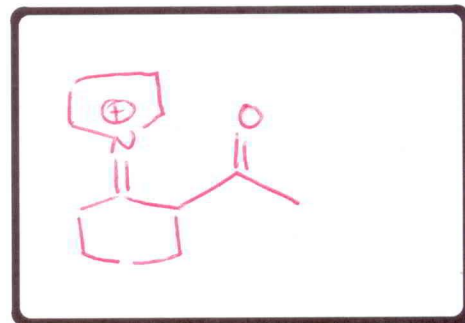
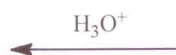
1) Provide the structure of product **B** as well as other missing intermediates in the following sequence of the reaction. **4 PTS**



+

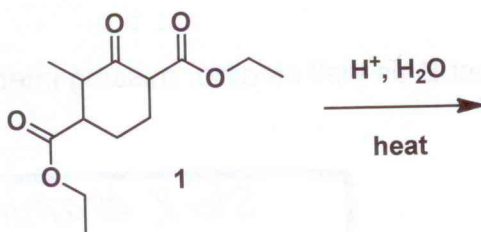


B (C₈H₁₂O₂)

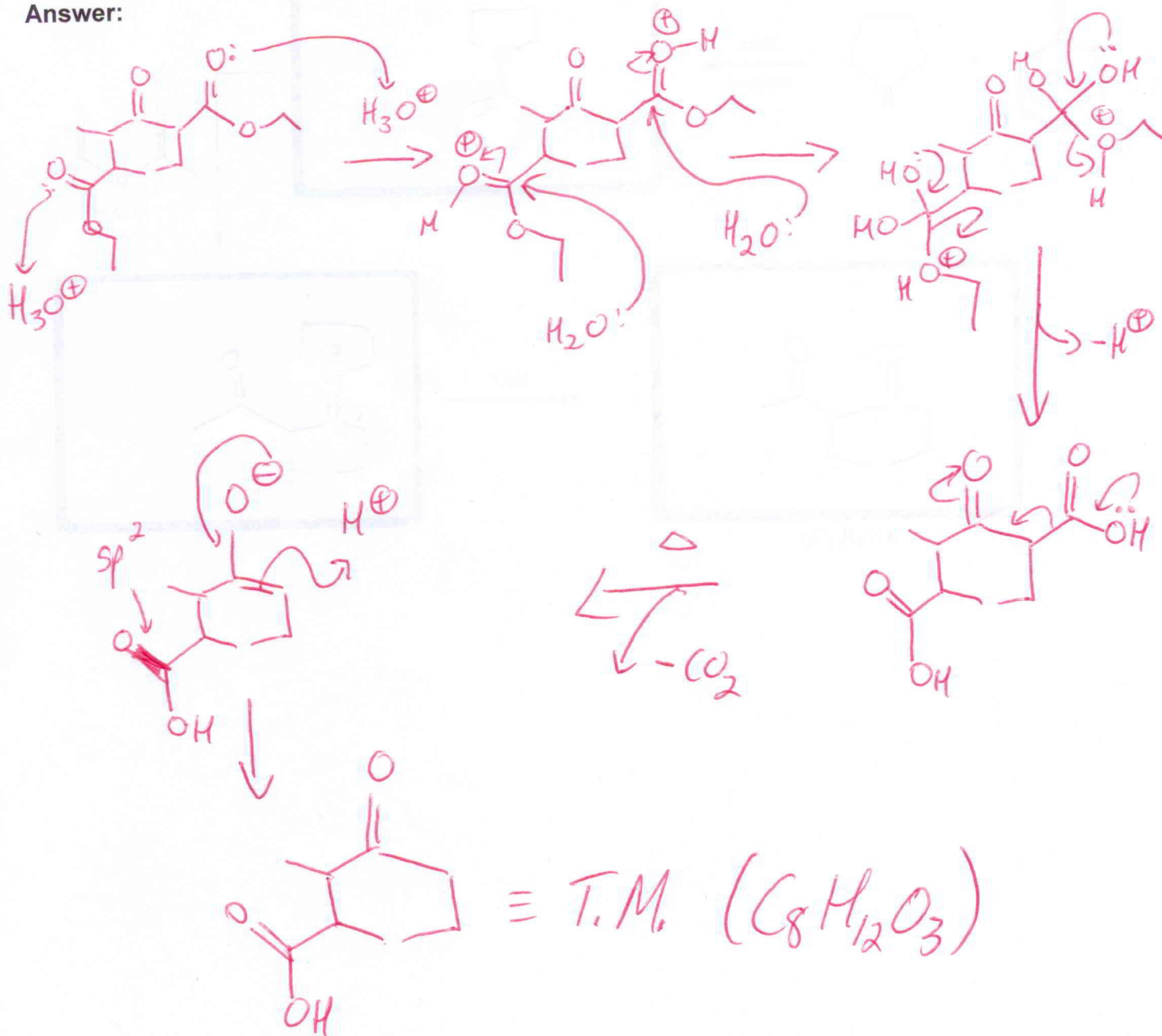




- 2) When compound 1 is treated with aqueous acid and heated, a compound with the molecular formula of $C_8H_{12}O_3$ is formed. What is the structure of this compound? Provide a mechanism. 2 PTS

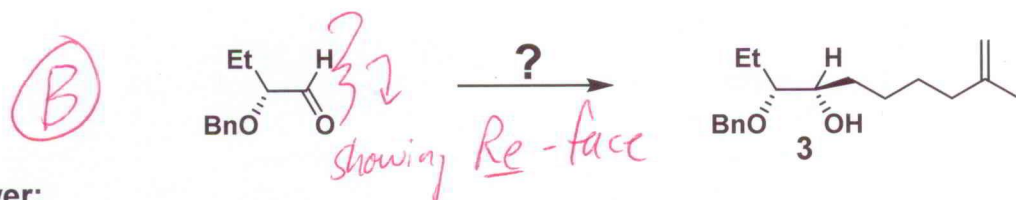
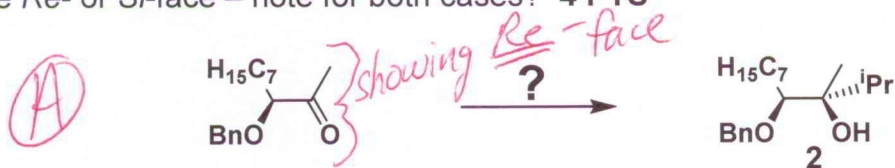


Answer:



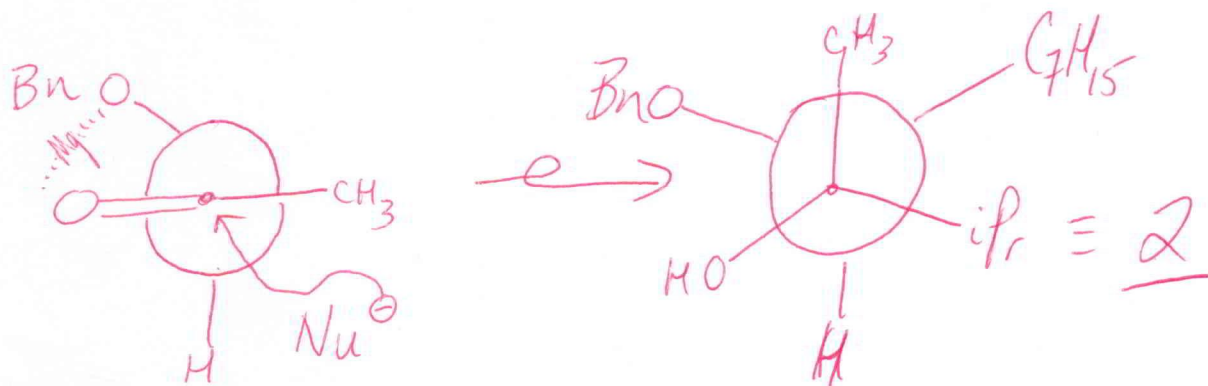


- 3) Provide the reagents required for the synthesis of **2** and **3**. Furthermore, provide the transition state(s), if any, for the reactions that will explain the stereochemical outcome. Is attack from the *Re*- or *Si*-face – note for both cases? **4 PTS**



Answer:

(A): Reagents = $\text{C}_7\text{H}_{15}\text{MgBr}$ or $\text{C}_7\text{H}_{15}\text{Li}$
Si-face attack



(B): Reagents = $\text{C}_7\text{H}_{15}\text{MgBr}$ or $\text{C}_7\text{H}_{15}\text{Li}$

