

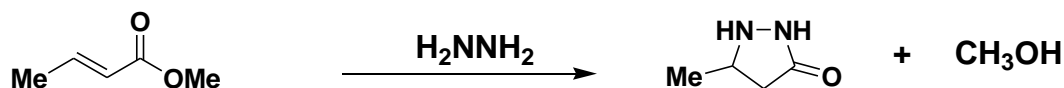
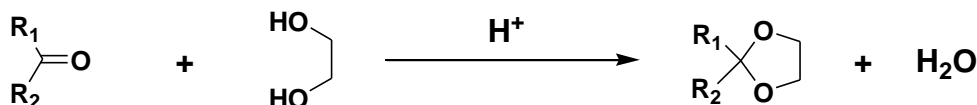


CHEM 8410_6410_4410 – Organic Synthesis

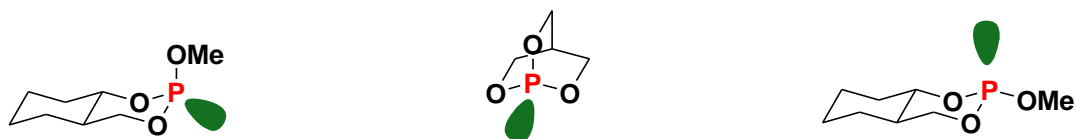
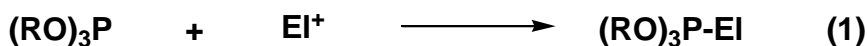
THE UNIVERSITY OF
TOLEDO
1872

Problem Set 1: This problem set is now available at (www.blackboard.utdl.edu). It will be due in class 21 days (02/07/17) from today (01/17/17). Grades will be administered as follows: 5 (exceptional effort), 4 (complete), 3 (incomplete or inadequate effort), 2 (poor effort), 0 (nonexistent). **No late problem sets will be accepted.**

- Problem:** Consider the structures XCH_2-OH where $X = OCH_3$ and F . **What** is the most favorable conformation of each molecule? Illustrate the dihedral angle relationship along the C–O bond. **Why** is it the most favorable conformation?
- Propose mechanisms for the following reactions.



- The three phosphites illustrated below exhibit a 750-fold span in reactivity with a test electrophile (eq 1) (Gorenstein, *JACS* **1984**, 106, 7831).



Rank the phosphites from the least to the most nucleophilic and provide a **concise explanation** for your predicted reactivity order.