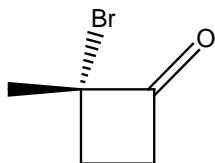


Homework/Problem Set

Chapter 16 (Aldehydes and Ketones – Nucleophilic Additions)

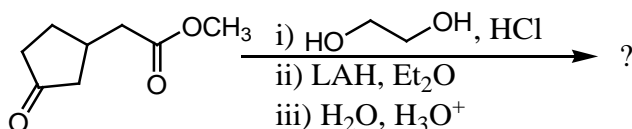
1. What is the correct IUPAC name for the following compound?



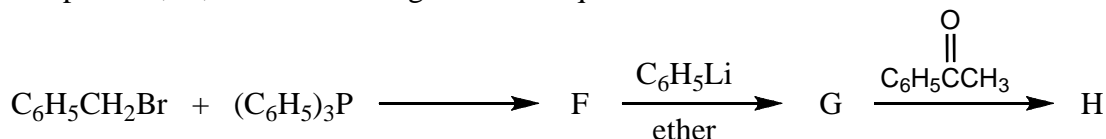
- (*S*)-2-Bromo-2-methylcyclobutanone; (*R*)-2-Bromo-2-methylcyclobutanone
(*S*)-1-Bromo-1-methyl-2-cyclobutanone; (*R*)-1-Bromo-1-methyl-2-cyclobutanone

2. What new compound will eventually be formed when HCl is added to a solution of pentanal in methanol?

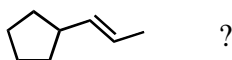
3. What is the major product of the following reaction sequence?



4. The product, **H**, of the following reaction sequence would be



5. Which Wittig Reagent Or Reagents would be used to synthesize?



- $\text{CH}_3\text{CH}=\text{P}(\text{C}_6\text{H}_5)_3$ $\text{Cyclopent-1-en-1-yl-CH}=\text{P}(\text{C}_6\text{H}_5)_3$ $\text{Cyclopent-1-en-1-yl-P}(\text{C}_6\text{H}_5)_3$ $\text{CH}_3\text{CH}_2\text{CH}=\text{P}(\text{C}_6\text{H}_5)_3$
I **II** **III** **IV**

6. Complete the following reaction sequence, giving structural details of all major intermediates

