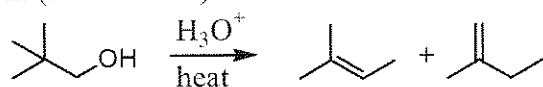


Open Ended Portion of the exam:

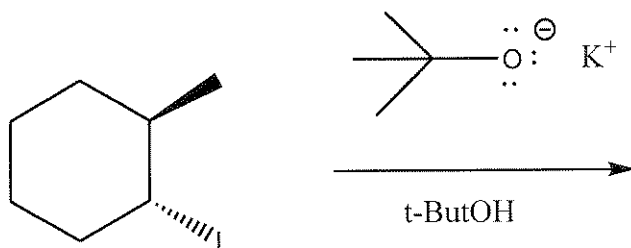
1. Which is the most efficient way to prepare isopropyl methyl ether via the Williamson method? Please discuss your work. I would like to have the reason for your choices. (10 POINTS)

2. Provide a mechanistic explanation for the formation of the observed products in the following reaction. (10 POINTS)



Discuss the stability of the final compounds. (3 points)

- 3) Draw the major elimination product and a detailed mechanism for the following reaction. Specify correct stereochemistry if appropriate. (10 POINTS)



Extra Credits:

- 1) When 5-bromo-1-pentanol is treated with sodium hydride in diethyl ether, the product is analyzed to be $\text{C}_5\text{H}_{10}\text{O}$. Propose a likely structure for this product, suggesting a reasonable mechanistic pathway for its formation (15 POINTS).

2) Write the final product of the following reactions (10 POINTS)

