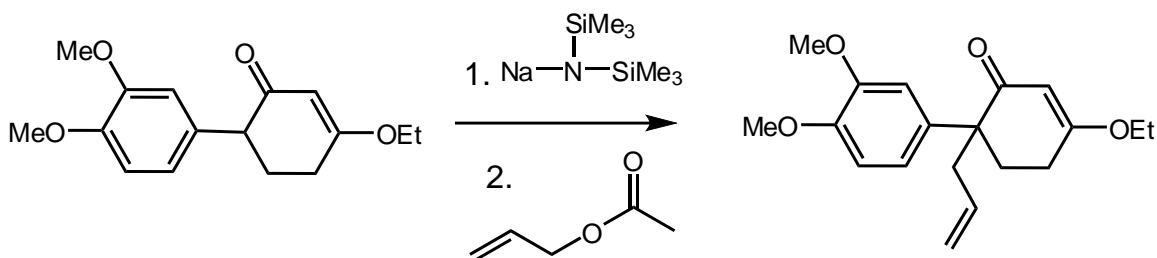


Problem 7

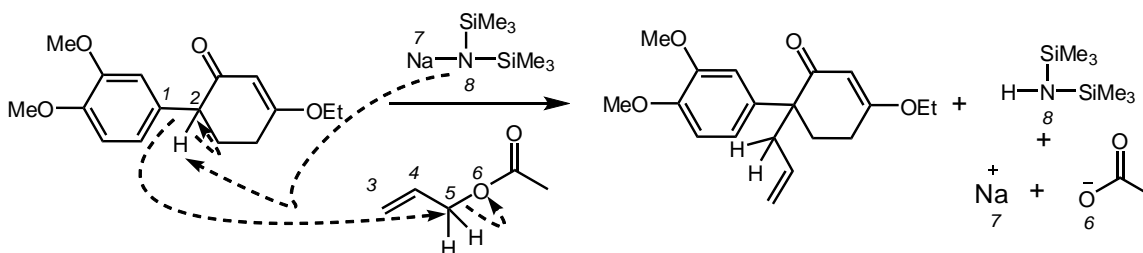


Ref.: Y. Zhao, Y. Zhou, L. Liang, X. Yang, F. Du, L. Li and H. Zhang, *Org. Lett.*, 2009, 11, 555-558.

1. Draw all bonds near the reactive center in the starting materials
2. Draw all H-atoms near the reactive sites of starting materials and products
3. Balance the equation
4. Number the non-H atoms
5. Identify the bonds made and broken

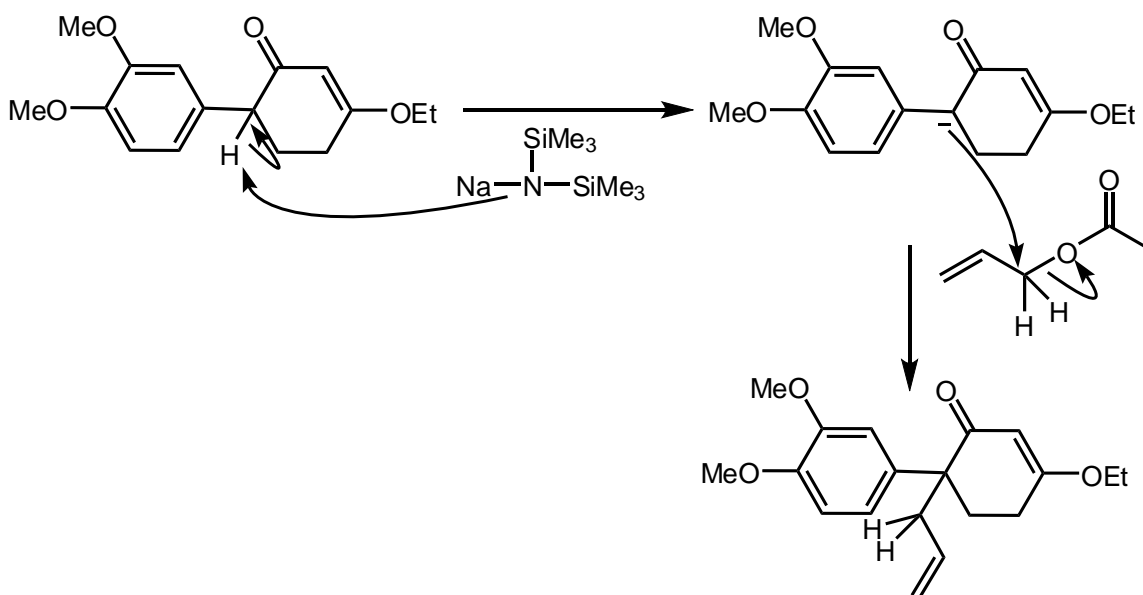
Bonds made: 2-5, 8-H.

Bonds broken: 2-H, 5-6, 7-8.



Identify the conditions

Basic (do not generate strong acids)

Mechanism:**Important points:**

1. The base used in this reaction is a common organic base that chemists use. It is called sodium hexamethyldisilazane (NaHMDS). A lithium version of the base is also frequently used. Its pK_a is 30.
2. The above reaction shows that a C-H bond after deprotonation generates a carbon anion that can be used as a nucleophile. The deprotonation of a C-H bond is possible when the proton is sufficiently acidic. You will see many such examples in carbonyl reactions.
3. Acetate is a good leaving group as it is resonance stabilized.

Now try the following reaction.

