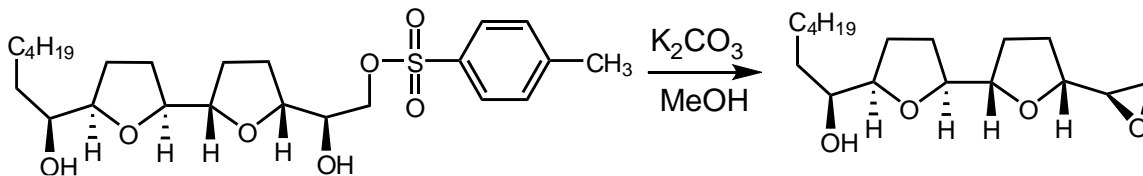


Problem 6

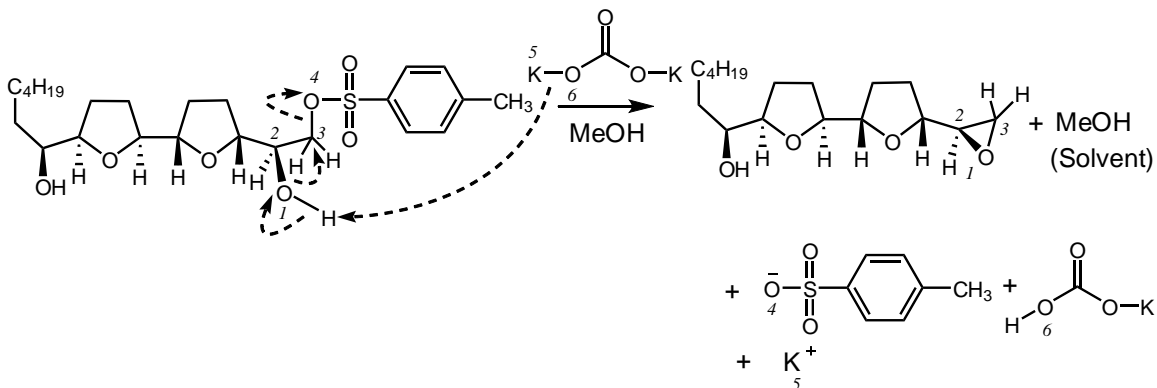


Ref.: C. L. Morris, Y. Hu, G. D. Head, L. J. Brown, W. G. Whittingham and R. C. D. Brown, *J. Org. Chem.*, 2009, 74, 981-988.

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

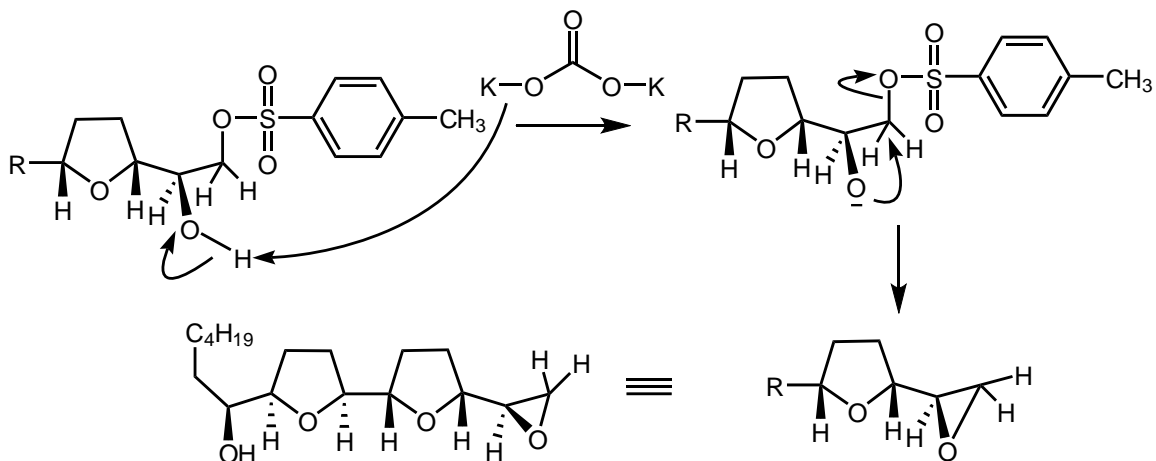
Bonds made: 1-3, 6-H.

Bonds broken: 1-H, 3-4, 5-6.



Identify the conditions

Basic (does not generate strong acids)

Mechanism**Discussion**

1. When big structures are involved in the mechanism, and the action is happening on only a remote part of the structure then a symbol such as R can be used to represent the part where no action is happening. Once the complete mechanism has been drawn, the rest of the substituents can be reattached to show the product (as shown above).

2. In the balanced equation, the H was attached with the carbonate and not the tosylate. Why? Because, the tosylate is a weaker base than the carbonate. As a matter of fact, *p*-toluene sulfonic acid (pK_a ~ -6) is a very strong acid. Hence, it has a weak conjugate base.