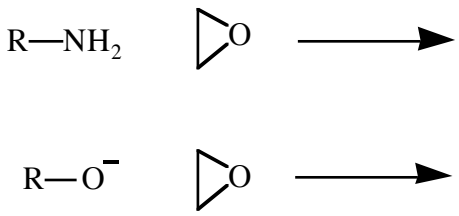
A few more previous questions relevant to Exam 5 in Spring 2007

From 2004

6. (5 min) Show **reagents** for accomplishing the following conversion in a practical manner.
(No mechanisms are necessary, but do show the **isolable product from each reaction** in the required sequence).

$(CH_3)_3CH \rightarrow (CH_3)_3CD$

10. (3 min) Show the product of the first step in the reaction of an amine with an epoxide and the product of the first step in the reaction of a phenoxide with an epoxide. ALSO add curved arrows to show electron flow in each reaction
(We had talked about the O in a strained three-membered ring being a practical "leaving group" for attack on one of the two C-O bonds)



11. (3 min) Explain how you would expect a change in solvent from ethanol to hexane to influence the relative rates of the two reactions in Question 10. For the sake of argument, suppose that they have the same rate in ethanol.

12. (7 min) Describe a real, convincing experimental proof that the normal course of an S_N2 substitution at carbon is stereochemical inversion, not retention or racemization. Try to give structures of the compounds and reagents actually used in the experimental proof.

From 2006

5. (5 min) Explain how comparing the rate constants for nucleophilic substition on R-L using a range of R groups and a single leaving group helps choose between Dissociation/Association and Concerted (or Association/Dissociation) mechanisms.