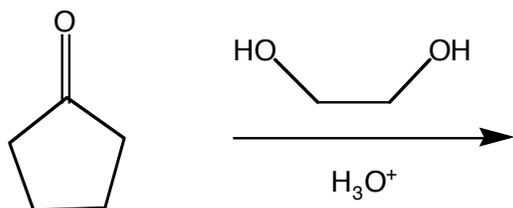


## Carbonyl Chemistry: Tutorial Sheet 1

1. Write the mechanism for the formation of acetal in ethylene glycol with an acid catalyst:



Write a mechanism for the reverse reaction to regenerate the starting ketone upon treatment of the acetal with aqueous acid.

Explain why hemiacetals, but not full acetals, are formed under basic conditions.

2. Give the product of each of the reactions below, which are all examples of the general case of a carbonyl compound reacting with a primary amine. Write a mechanism for the general reaction of a carbonyl compound with RNH<sub>2</sub>.

