ADDITION TO C=O

Fill in the empty boxes. Provide mechanisms for the following transformations, all of which involve nucleophilic attack on a carbonyl or carbonyl-like functional group. Do this on a separate piece of paper of course.

Hydrate Formation

provide a mechanism:

A 0 H20 H0 01

C OH H2O HO OH OH

predict product:

D OMe H₂O

HO OH H₂O

CI H₂O

(Hemi)acetal Formation

provide a mechanism, notice these are all acid-catalyzed:

Ph., Ts O OTBDPS Ph., N-Ts

HO OH OH OH OH OH OH OH

predict product:

J

K

L

Hydride and Carbanion Addition

provide a mechanism:

N O

0

predict product:

Q

R