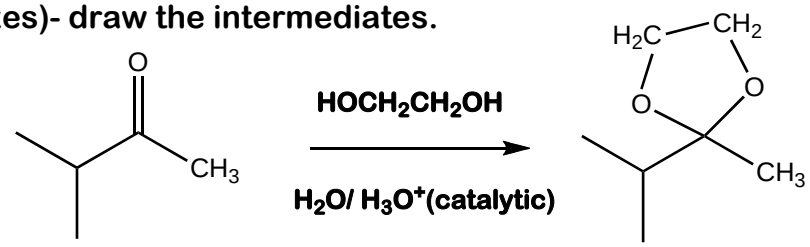
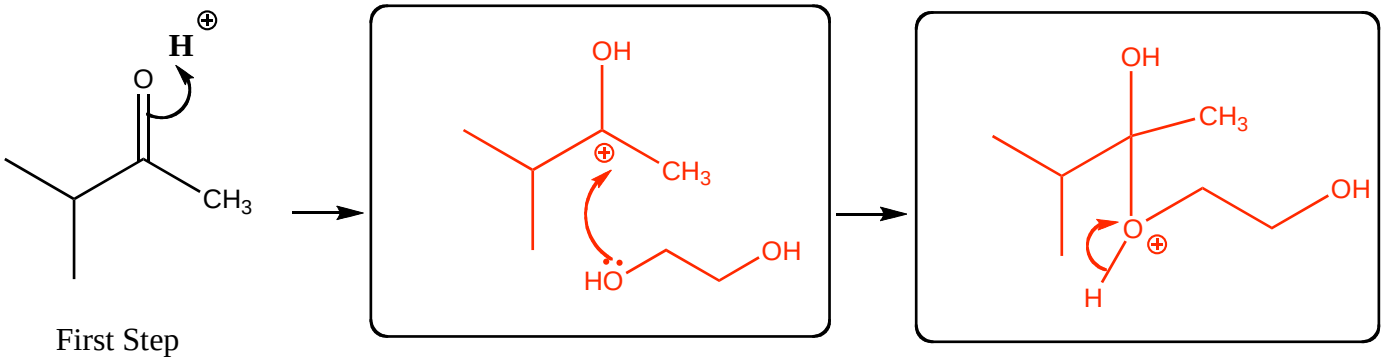
Last Name:	First Name:
UTEID:	SCORE: KEY

POW 5 CH 310N Due October 5, 2009

Mechanism: Provide a mechanism for the following transformation. Show all important flows of electrons, charges and intermediates. Where indicated, (in the structure boxes)- draw the intermediates.





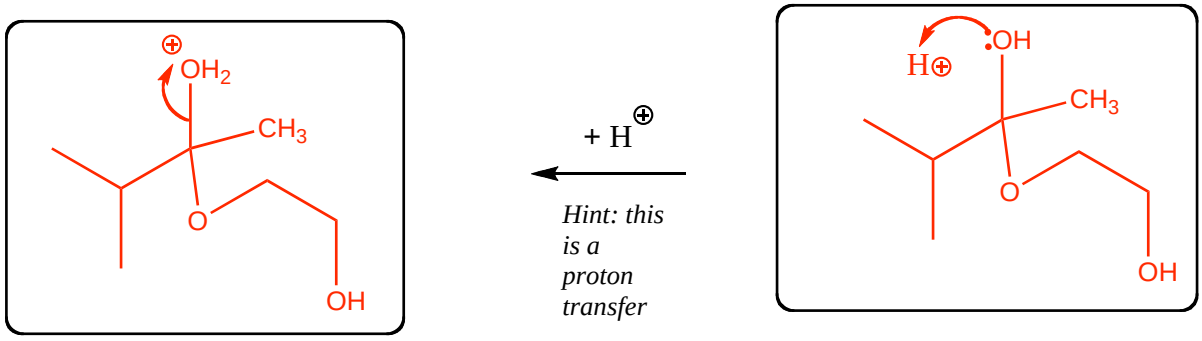
First Step

Protonated ketone intermediate

Hint: next step is the nucleophilic attack of ethylene glycol-use one of the oxygen atoms

Tetrahedral Intermediate

- H ⊕ *Hint: this is a loss of a proton*

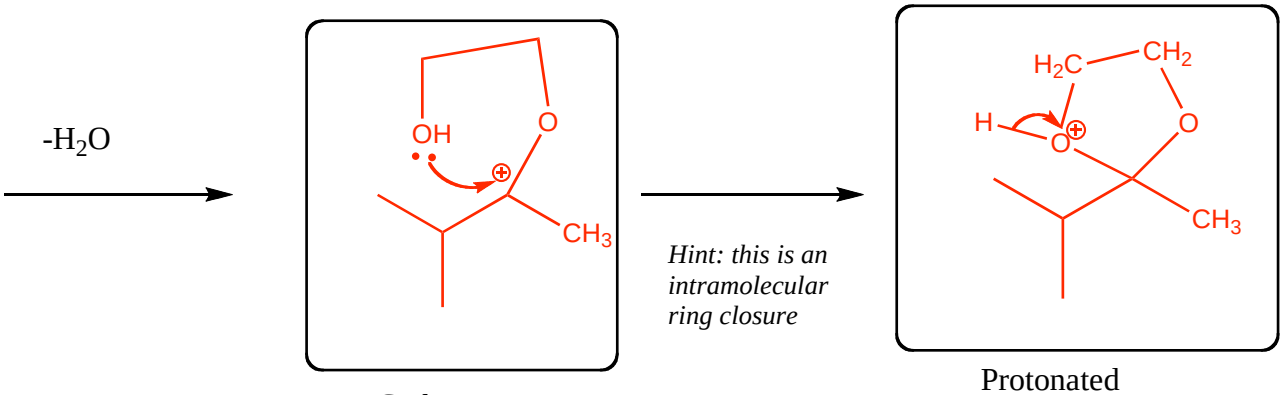


Protonated Hemiacetal *(this intermediate will loose H_2O)*

Hint: this is a proton transfer

Neutral Hemiacetal

continue on next page


-H2O
OH
O
CH3
Hint: this is an intramolecular ring closure
H2C
CH2
H
O
O
CH3
Carbocation intermediate
Protonated Acetal
-H
Hint: this is a loss of a proton
H2C
CH2
O
O
CH3
Product: acetal