ANSWER KEY

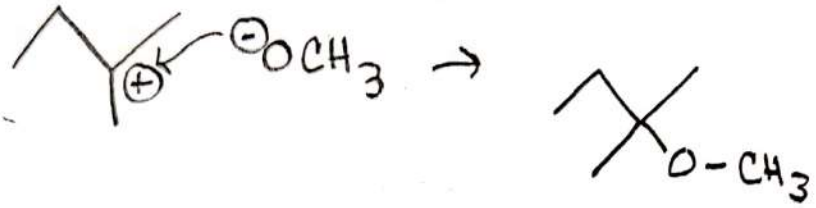
Review of Ch 8

8.1 Curved arrows - 3 basic movements, draw all products!

① LP → bond

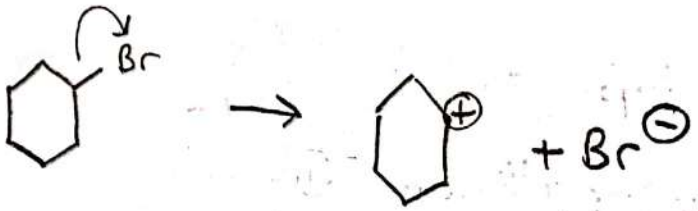
ex

carbocation

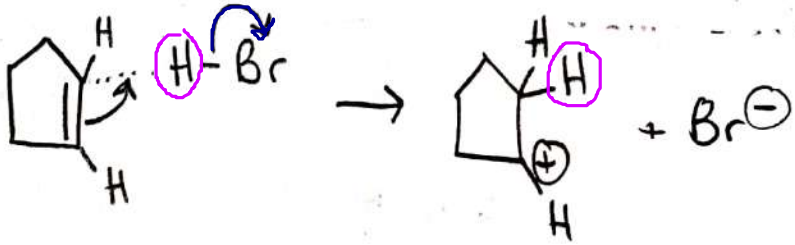


② Bond → LP

ex

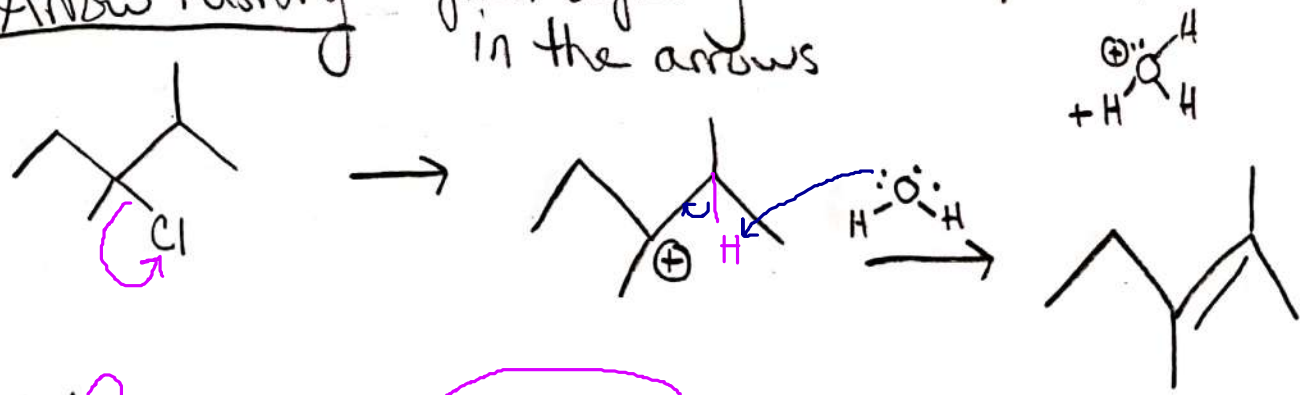


③ Bond → Bond

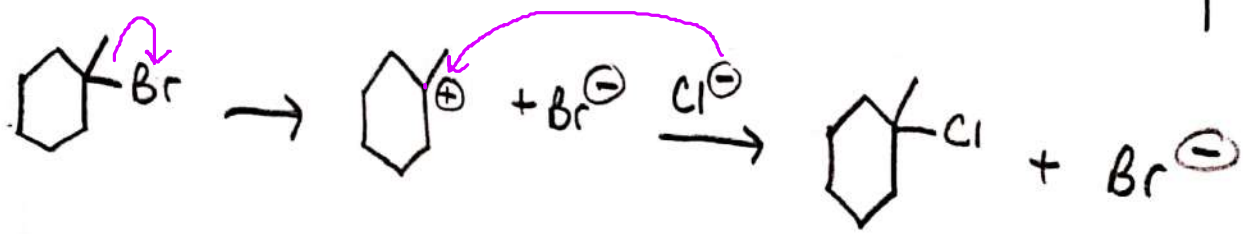


8.2 Arrow Pushing - given beginning + end compounds, draw in the arrows

a)



b)

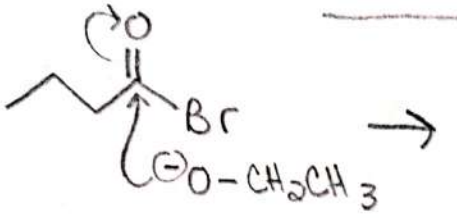


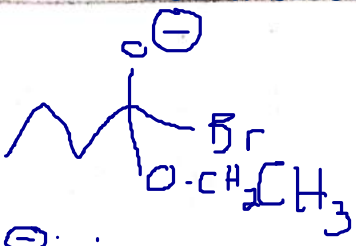
8.3 Drawing Intermediates

Draw products!

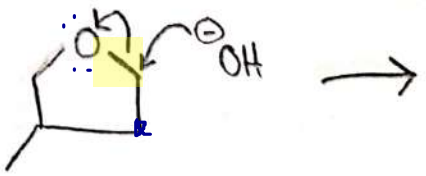
↳ Define intermediate: compound that exists for a short time

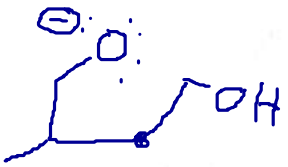
a)





b)





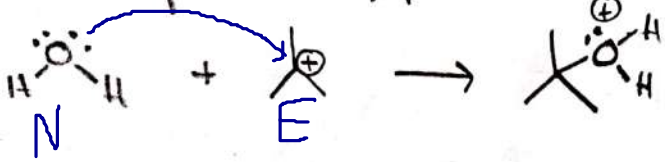
8.4 Nucleophiles & Electrophiles

↳ compound being "attacked"

↳ "Attacking" compound

(*define each!)

Identify each role, you will need to draw the arrow(s).



8.5 Bases Vs. Nucleophiles

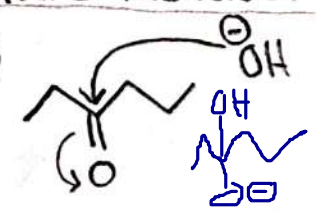
↳ attaches to the compound (new bond)

↳ take a H

(*define each!)

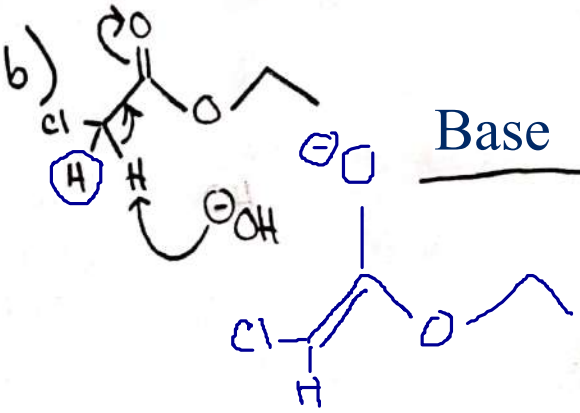
Determine the role of each "OH"

a)



Nuc

b)



Base

Nucleophilicity is a measure of kinetics = speed of Rxn

While Basicity is a measure of position of equilibrium stability (thermodynamics)

8.6 The regiochemistry is contained w/in the Mechanism

1) What is regiochemistry: where the rxn takes place

182 2) Fill in the Chart:

elimination Reactions (type) — remove 2 atoms and form 2x bond

- more sub. product name: zaitsev
- less sub. product name: hoffman

3) Which product above tends to be more stable? Why?

zaitsev - because the carbocation is more sub. (stable)

4) Fill in the Chart:

183 addition Reactions (type) — adding 2 atoms across the 2x bond (breaks it)

- more sub C gets group: Markovnikov
- less sub C gets group: Anti - Markovnikov

5) Which product above tends to be more stable? Why?

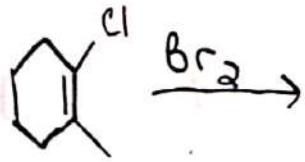
Markovnikov because the carbocation is more sub. (stable)

8.7 The Stereochemistry is Contained w/in the Mechanism

1) define stereochemistry: R/S configurations

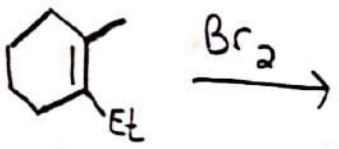
2) define racemic mixture: mixture of mixed R and S

3) Draw Syn addition:



syn = both wedges or both dashes

4) Draw anti addition:



anti = 1 wedge and 1 dash

5) ADD H + OH across the double bond w/ Markovnikov regiochemistry, and anti-addition.