(9) **Today**

Sections 11.7 - 11.11: Practice Elimination Reactions

Competition between S_N1, E1, S_N2, and E2

Next Class (10)

Chap 12: Mass Spectrometry and Infrared Spectroscopy

(11) **Second Class from Today**

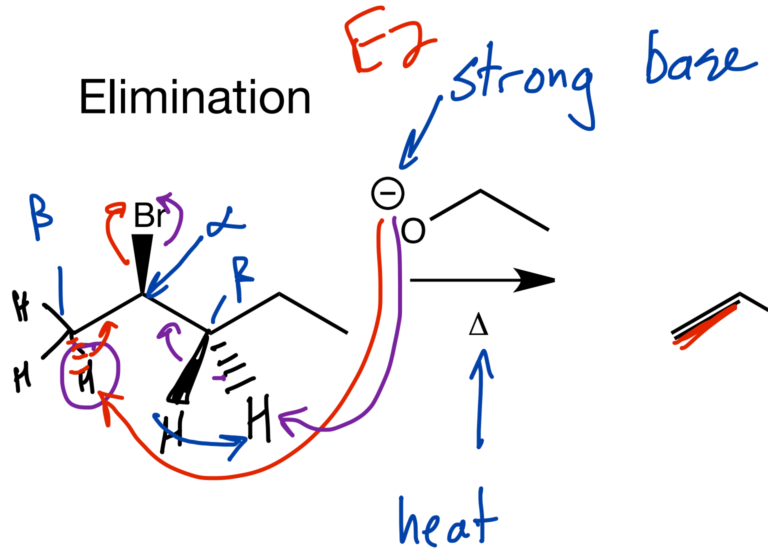
pseudo-Monday

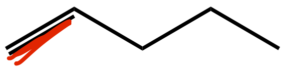
Chap 12: Mass Spectrometry and Infrared Spectroscopy

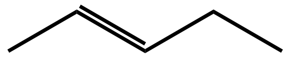
Third Class from Today (12)

Chap 13: Nuclear Magnetic Resonance Spectroscopy

Elimination




A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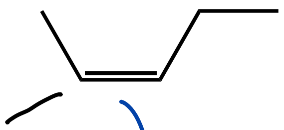
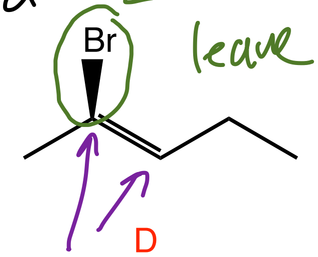

C

Br is up + infront
β-H must be down + behind

Practice

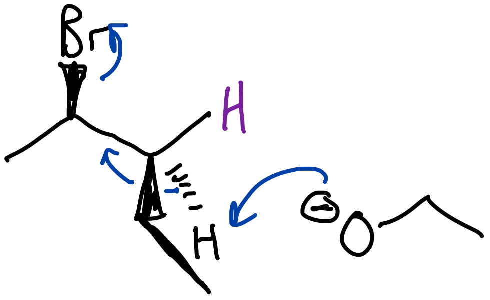


D

For the E2 rxn to occur, the β-C to β-H bond has to be antiperiplanar with the α-C to LG bond

HO⌒ solvent for rxn is typically the alcohol of the alkoxide

Ⓒ forms when the C-C bond rotates other β-H into position

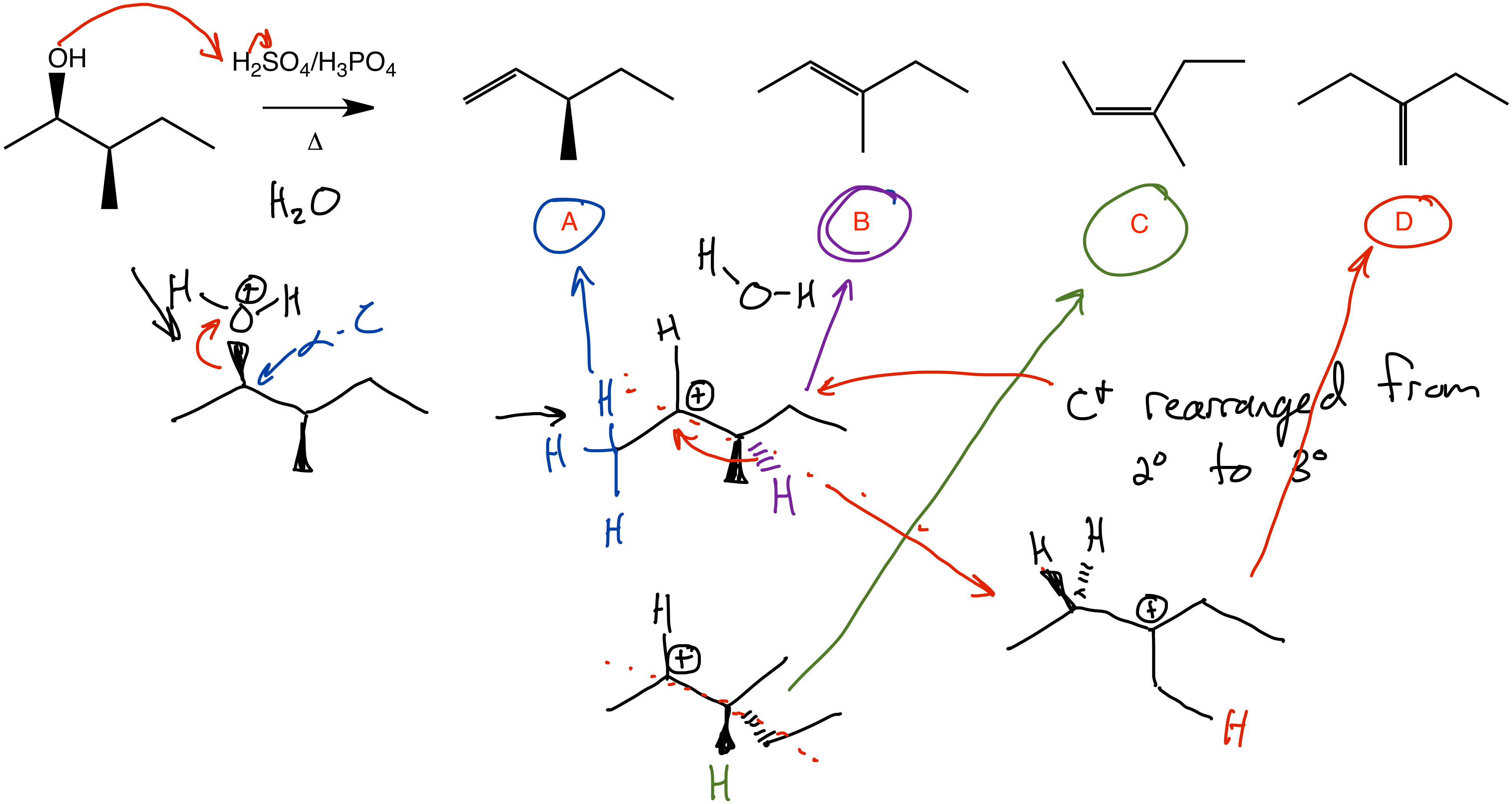


when there is only 1 β-H you have to pay attention to the stereochemical outcome

Elimination

E1 Find α-C check for possible C^+ rearrangements

Practice

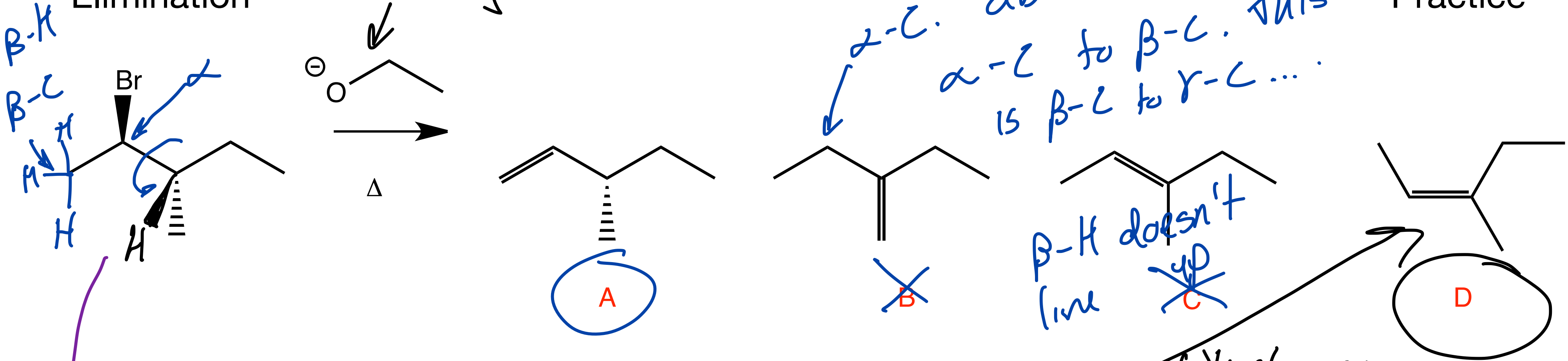


C^+ rearranged from 2° to 3°

All possible products form. Rearrangements are possible.

Elimination Practice

strong base, so E2



db should be α-C to β-C. this one is β-C to γ-C....

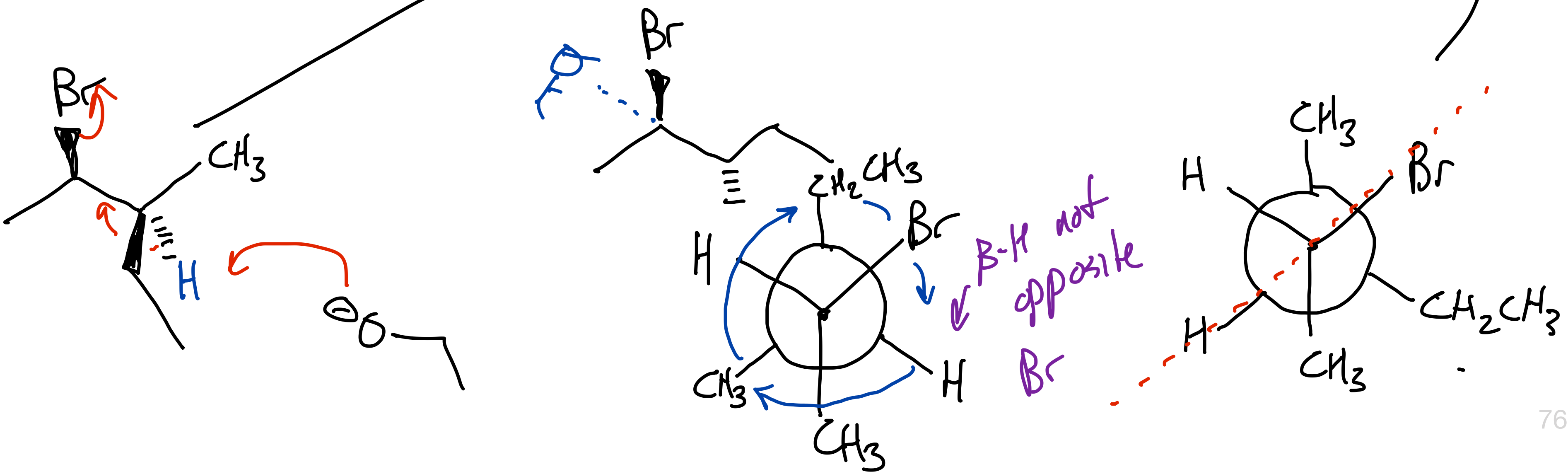
β-H doesn't line ~~up~~

Which one

this rotamer cannot react to form internal db (C or D)

The Br is up + in front and the β-H is down + in front

Need to rotate so β-H is down + behind screen

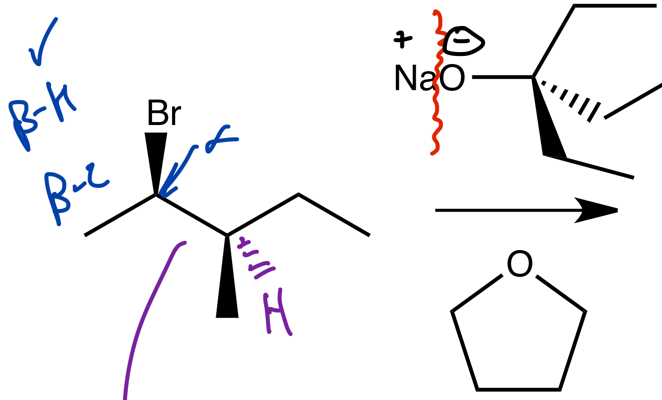


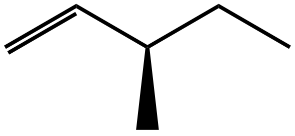
β-H not opposite Br

Elimination

Mechanism? E2 Products? Major product?

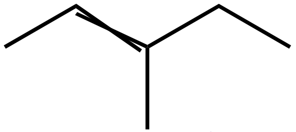
Practice



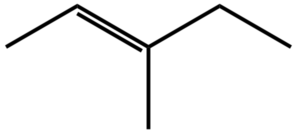


A

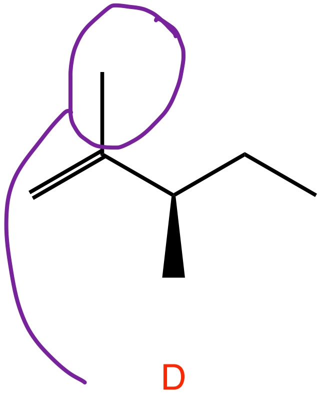
only 1 stereoisomer



forms ~~B~~



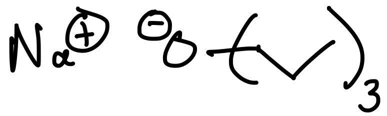
C



D

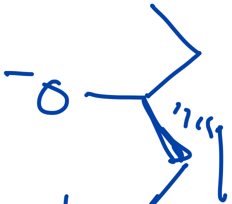
when LG goes the bond goes too

ionic...



this rotamer has α-C to LG + β-C to β-H aligned properly

Major product... A because

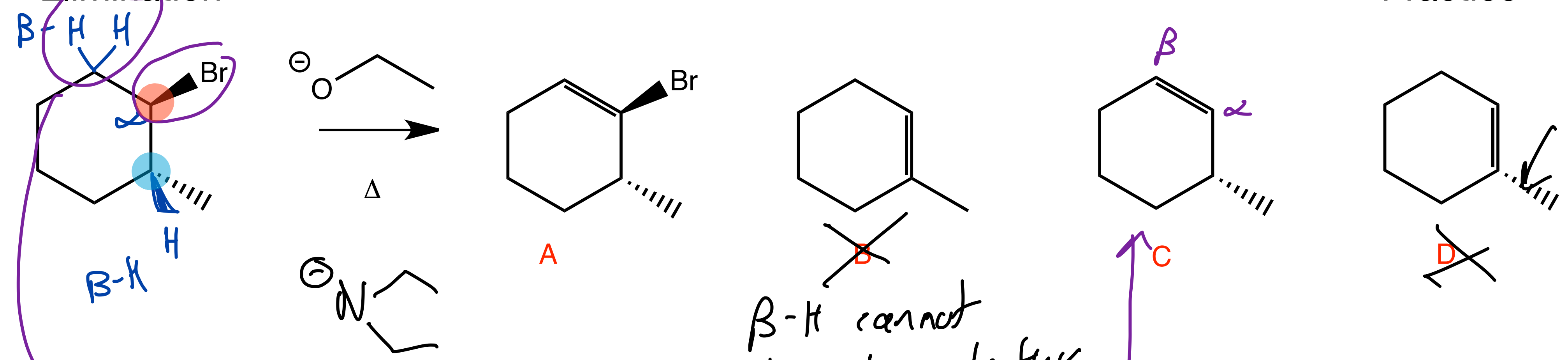


is a big base and will have difficulty abstracting β-H from crowded position

Elimination

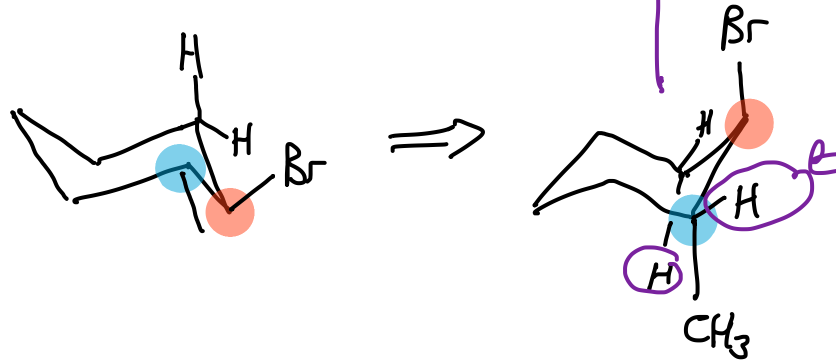
E2

Practice



β-H cannot align to make this prod

Br + one of the β-H can align in a diaxial arrangement



β-H not aligned with axial Br

$H-\underset{H}{O} < HO^{\ominus}$

$H_2O < NH_3 < {}^{\ominus}NH_2$