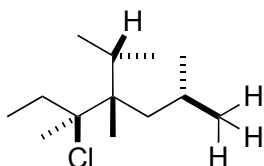


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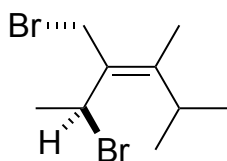
Chemistry 236 Organic Chemistry I – Fall 2023
Practice Midterm #2

1. What is the IUPAC name for the following compounds?

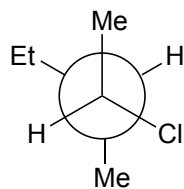
a)



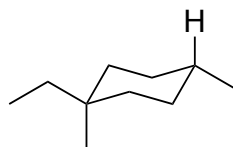
b)



c)



d)



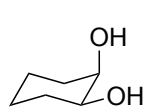
2.

a) Show the entire mechanism including initiation, propagation, and termination step for the free-radical addition of HBr to (S)-1,3-dimethylcyclohex-1-ene. You can use any initiation covered in lecture.

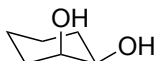
b) Indicate whether the reaction is non-stereoselective, diastereoselective, or enantioselective. Provide an explanation to support your choice.

c) For any stereocenters that may be present, provide an R / S assignment.

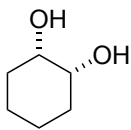
3. Determine the relationship between the following compounds.



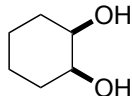
A



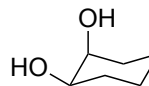
B



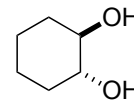
C



D



E



F

a) Compound A and B

b) Compound B and D

c) Compound E and F

d) Compound B and E

4. Answer the following questions using a maximum of two sentences.

a) Explain why the separation of enantiomers is typically a significant challenge.

b) Explain why racemic mixtures exhibit different properties compared to optically pure compounds.

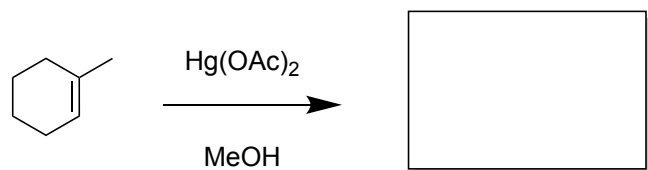
c) Explain what causes an ion-induced dipole interaction.

d) Explain how an A-value is calculated.

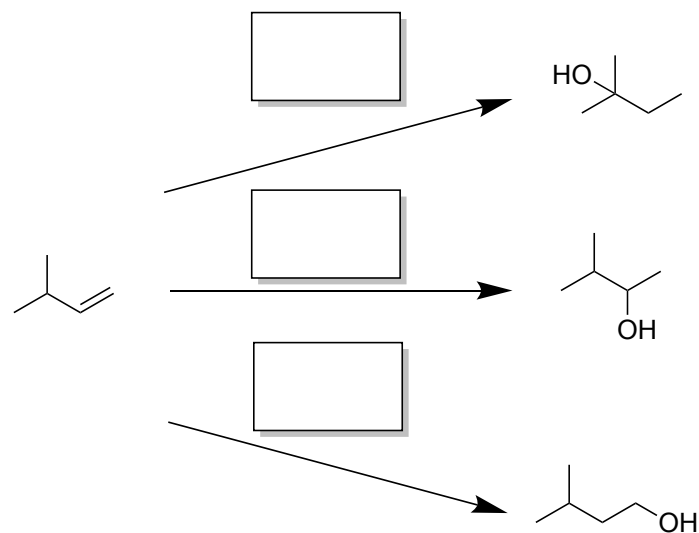
e) Under what circumstance will a reaction be diastereoselective?

5) Predict the major product for the following reactions.

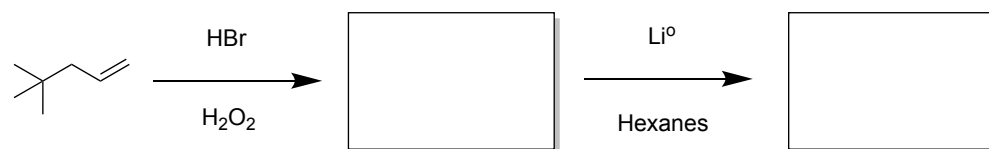
a)



b)

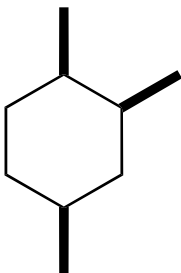


c)



6) Convert each of the following compounds into chair form, perform a ring flip, and indicate a most stable chair.

a)



b)

