LeAP: Alkenes

- Due Nov 21, 2024 at 11:59pm
- Points 5
- Questions 11
- Available Nov 3, 2024 at 12am - Dec 2, 2024 at 11:59pm
- Time Limit None
- Allowed Attempts 2

Instructions

Lecture Application Practices (LeAPs) serve as initial opportunities for students to apply the information they've gathered from the pre-lecture videos and in-person lectures/lecture videos.

Students are strongly encouraged to complete LeAPs on the same day that the corresponding topic is completed in class. However, to provide consistent due dates, sets of LeAPs will be due on Thursdays at 11:59 PM - Chicago time. See the Weekly Schedules or Course Calendar for specific due dates for each activity.

Each LeAP is worth 5 points. Credit will be awarded based on accuracy. There is no time limit. Students will receive two attempts for each assignment and the highest score will be recorded in the gradebook. LeAPs may consist of multiple-choice, calculation, ranking, choose all that apply, and fill in the blank type questions.

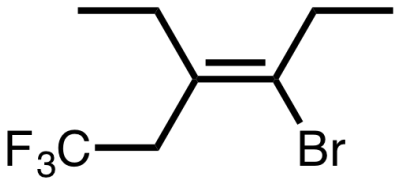
This quiz was locked Dec 2, 2024 at 11:59pm.

ⓘ Correct answers are hidden.

Score for this attempt: 5 out of 5
Submitted Nov 19, 2024 at 3:07pm
This attempt took 4 minutes.

Question 1
0.5 / 0.5 pts

Type the name of the molecule in the box. Remember to include E or Z in parenthesis [ex. (E) or (Z)] at the beginning of the name to define the stereochemistry around the alkene.

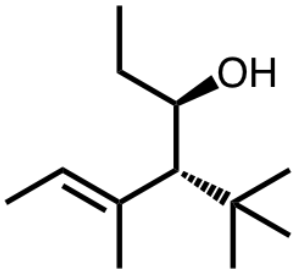


(Z)-4-Bromo-3-ethyl-1,1,1-trifluoro-3-hexene

Question 2

0.25 / 0.25 pts

Name the molecule shown below.

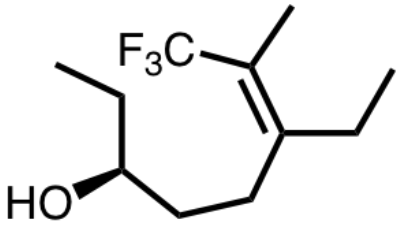


- (3R,4R,E)-4-(1,1-dimethylethyl)-5-methylhept-5-en-3-ol
- (3S,4S,E)-5-methyl-4-(1,1-dimethylethyl)hept-5-en-3-ol
- (3R,4R,Z)-4-(1,1-dimethylethyl)-3-methylhept-2-en-5-ol
- (3S,4S,Z)-3-methyl-4-(1,1-dimethylethyl)hept-2-en-5-ol

Question 3

0.25 / 0.25 pts

Name the molecule shown below.

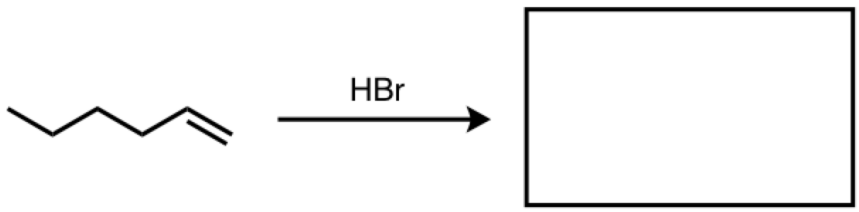


- (*S,E*)-3-ethyl-2-methyl-1,1,1-trifluorooct-2-en-6-ol
- (*S,E*)-3-ethyl-1,1,1-trifluoro-2-methyloct-2-en-6-ol
- (*S,Z*)-6-ethyl-7-methyl-8,8,8-trifluorooct-6-en-3-ol
- (*S,Z*)-6-ethyl-8,8,8-trifluoro-7-methyloct-6-en-3-ol

Question 4

0.25 / 0.25 pts

Which rule is followed during this electrophilic addition to the alkene to determine the **location** of the two new substituents?



- Zaitzev
- Hofmann
- Markovnikov
- Anti-Markovnikov

Question 5
0.25 / 0.25 pts

What kind of intermediate is formed when an alkene is exposed to a **strong acid**?

- A carbocation
- A three-membered ring
- A carbanion
- A five-membered ring

Question 6
0.5 / 0.5 pts

Fill in the blanks with either "syn" or "anti".

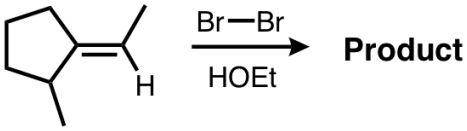
The stereochemistry found in the product of an electrophilic addition to an alkene is related to the mechanism of the reaction. Usually [syn] additions result from both new groups adding in a single concerted step. Whereas [anti] additions result from a 2-step addition.

Answer 1:
syn
Answer 2:
anti

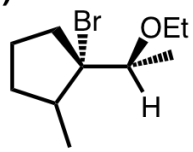
Question 7

0.5 / 0.5 pts

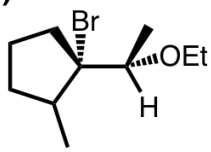
What is the product formed in this reaction?



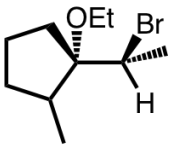
A)



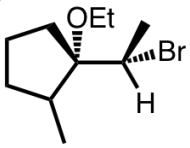
B)



C)



D)

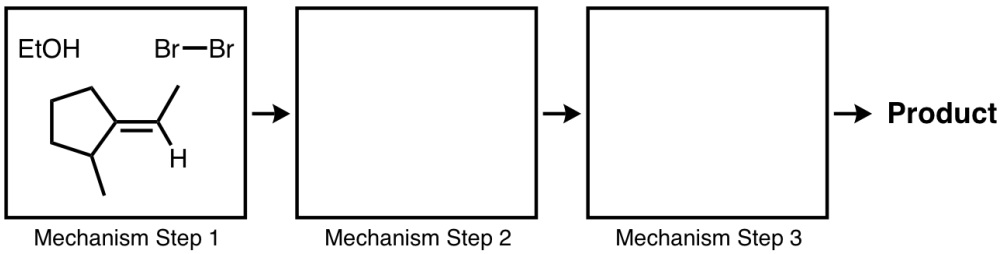


- A
- B
- C
- D

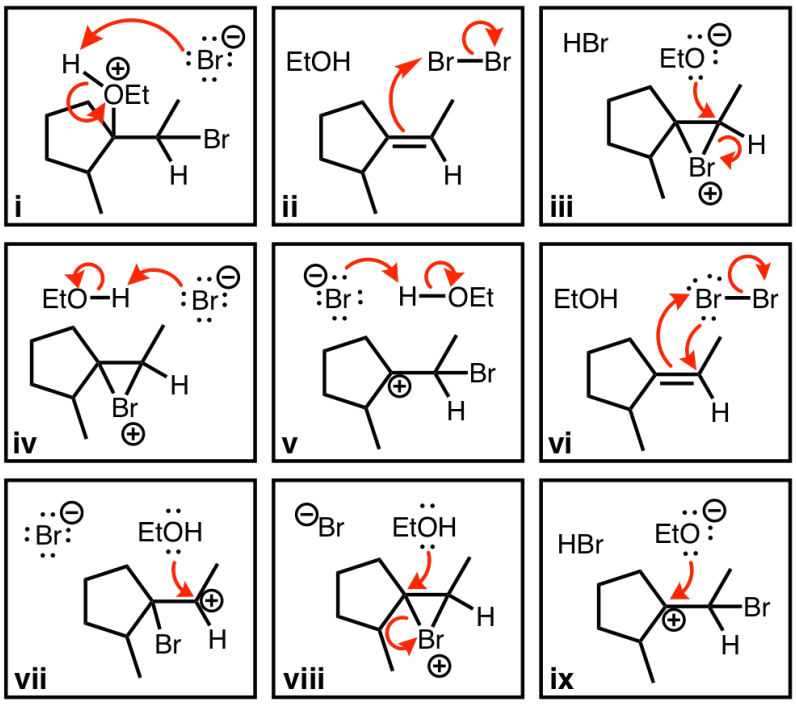
Question 8

1 / 1 pts

On a piece of paper, draw out the arrow-pushing mechanism for the reaction from the previous problem.



Then, identify the three arrow-pushing steps from boxes i-ix that are needed to convert the starting material into the product.



Mechanism Step 1

vi

Mechanism Step 2

viii

Mechanism Step 3

i

Question 9

0.5 / 0.5 pts

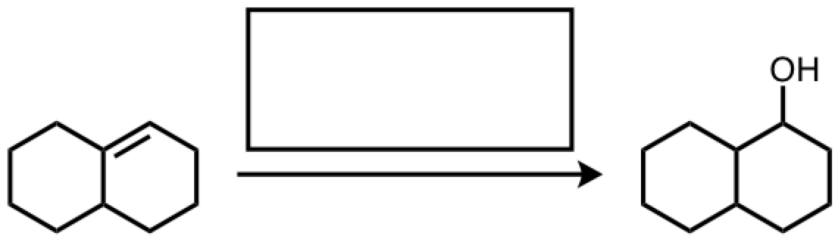
2-bromo-3,4-dimethylpentane is combined with t-butoxide. The product of this reaction is

- 2,3-dimethyl-2-pentene
- 3,4-dimethyl-1-pentene
- (*E*)-3,4-dimethyl-2-pentene
- (*Z*)-3,4-dimethyl-2-pentene

Question 10

0.5 / 0.5 pts

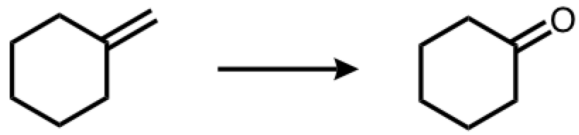
Fill in the box with the appropriate reagent(s)



- 1. $Hg(OAc)_2$, H_2O; 2. $NaBH_4$, NaOH
- 1. BH_3; 2. H_2O_2, NaOH
- H_2SO_4, H_2O
- H_2, Pd/C

Question 11
0.5 / 0.5 pts

Consider how the structure of the starting material changes. What reaction has taken place?



- Epoxidation
- Hydrogenation
- Hydration
- Ozonolysis

Quiz Score: 5 out of 5