LeAP: Addition to Enones

- Due Nov 7, 2024 at 11:59pm
- Points 5
- Questions 5
- Available Oct 6, 2024 at 12am - Nov 11, 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 Nov 11, 2024 at 11:59pm.

Attempt History

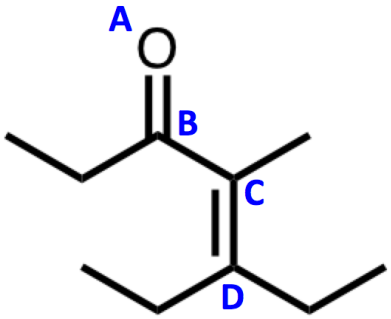
	Attempt	Time	Score
KEPT	Attempt 2	2 minutes	5 out of 5
LATEST	Attempt 2	2 minutes	5 out of 5
	Attempt 1	1,204 minutes	4.6 out of 5

ⓘ Correct answers are hidden.

Score for this attempt: 5 out of 5
Submitted Nov 6, 2024 at 11:40am
This attempt took 2 minutes.

Question 1
0.5 / 0.5 pts

α,β-Unsaturated carbonyls act as electrophile starting materials in reactions. What positions in an α,β-unsaturated carbonyl can a nucleophile attack?



- A and B
- B and C
- B and D
- A and D

Question 2

1 / 1 pts

Which of the following statements is true?

- NaCN is a weak base that adds to an enone through a 1,4-addition. A carbonyl will be found in the final product.
- NaCN is a strong base that adds to an enone through a 1,2-addition. A carbonyl will be found in the final product.
- NaCN is a weak base that adds to an enone through a 1,2-addition. An alkene will be found in the final product.
- NaCN is a strong base that adds to an enone through a 1,4-addition. An alkene will be found in the final product.

Question 3

1 / 1 pts

Which of the following statements is true?

- $LiAlH_4$ is a weak base that adds to an enone through a 1,4-addition. A carbonyl will be found in the final product.
- $LiAlH_4$ is a strong base that adds to an enone through a 1,2-addition. An alcohol will be found in the final product.
- $LiAlH_4$ is a weak base that adds to an enone through a 1,2-addition. An alcohol will be found in the final product.
- $LiAlH_4$ is a strong base that adds to an enone through a 1,4-addition. A carbonyl will be found in the final product.

Question 4

0.5 / 0.5 pts

Which organometallic reagent will add to an enone through a 1,4-addition?

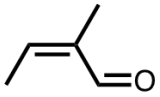
- $LiCu(CH_2CH_3)_2$

- $LiCH_3$
- $ClMgCH(CH_3)_2$
- $BrCH_2CH_3$

Question 5
2 / 2 pts

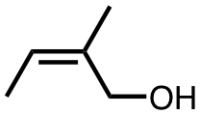
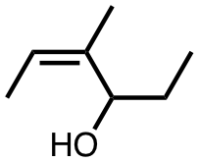
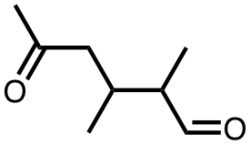
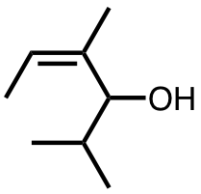
Enones (α,β-unsaturated carbonyls) act as electrophiles. Consider the enone starting material given below, and choose the reagent(s) from the list that is needed to perform each transformation shown.

Type the reagent(s) into the corresponding box. Do not use subscripts. If a reaction requires multiple reagents, they should be entered in alphabetical order and separated by commas. Assume that an aqueous workup automatically occurs if needed. (Use the **Reagent Cabinet List** (https://docs.google.com/document/d/1RGMrlYLL_vMpFFJwR9g6cNQAaUplRSXUXcZQalNLY3Y/edit?usp=sharing) as a reference for correct formatting of your answers.)

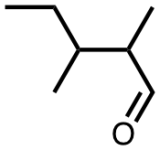
Enone Starting Material: 

Reagent List

NaH	CH3COCH3, heat, NaOH	LiCH(CH3)2	LiCu(CH2CH3)2
LiAlH4	CH3COCH2CH3, heat, NaOH	KOC(CH3)3	BrMgCH2CH3

Starting Materials		Product
a. Enone +	LiAlH4 →	
b. Enone +	BrMgCH2CH3 →	
c. Enone +	CH3COCH3, heat, →	
d. Enone +	LiCH(CH3)2 →	

e. Enone + LiCu(CH2CH3)2 →



Answer 1:
LiAlH4
Answer 2:
BrMgCH2CH3
Answer 3:
CH3COCH3, heat, NaOH
Answer 4:
LiCH(CH3)2
Answer 5:
LiCu(CH2CH3)2

Quiz Score: 5 out of 5