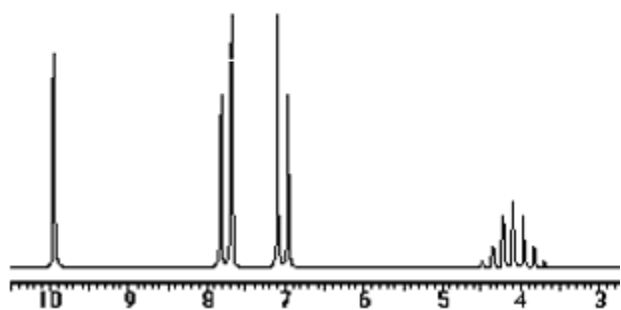
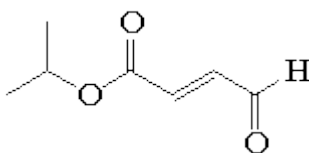
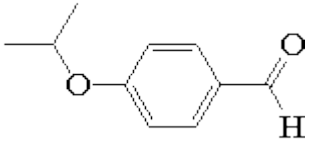
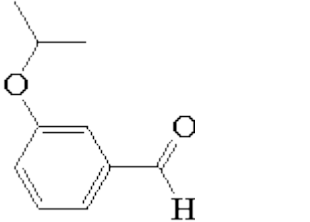
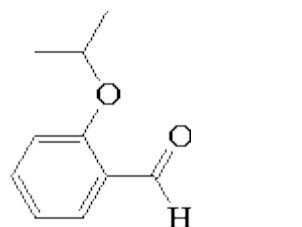
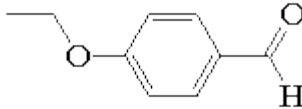


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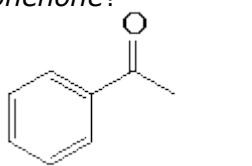

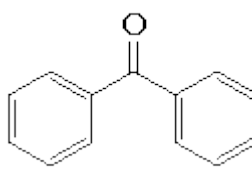
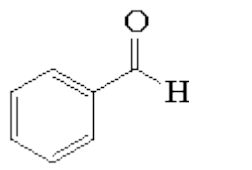

1. Which of the following compounds *most likely* generated the accompanying ^1NMR -spectrum?



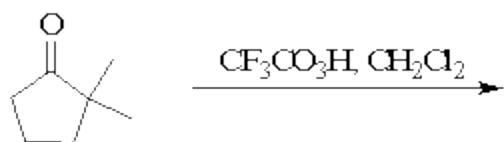
- A. 
- B. 
- C. 

- D. 
- E. 

2. Organic chemistry is rich with nomenclature, both IUPAC and common. What is the correct structure for the molecule that bears the common name *benzophenone*?

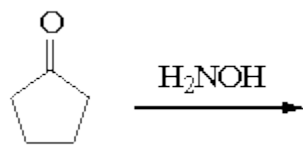
- A. 
- B. 
- C. 
- D. 
- E. 

3. What is the *major* product of the following reaction?



- A.
- B.
- C.
- D.
- E.

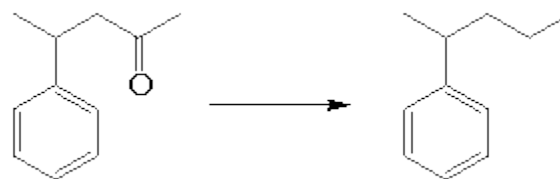
4. Aldehydes and ketones react readily with hydroxylamine (and certain other primary amines) to yield what product?



- A.
- B.

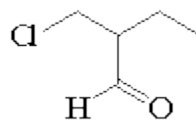
- C.
- D.
- E.

5. What reagents would allow you to accomplish the conversion of C=O to CH₂?



- A. NaBH₄/CH₃OH
- B. Zn(Hg)/ aq. HCl
- C. H₂/Pt
- D. H₂NNH₂, KOH, heat
- E. Both B and D are correct.

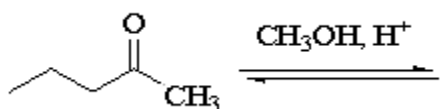
6. How would you name the following molecule?

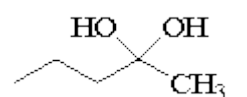
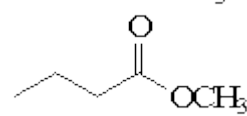
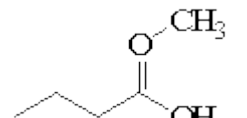
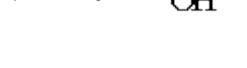


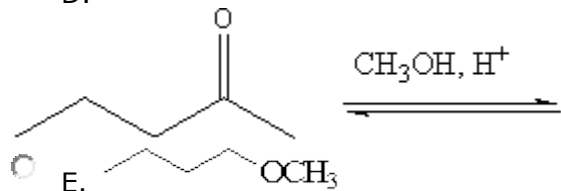
- A. 1-chloro-2-butanealdehyde
- B. 2-(chloromethyl)butanal
- C. 3-chloro-2-ethylpropanal

- D. 4-chloro-4-oxobutane
- E. 1-chloro-2-formylbutane

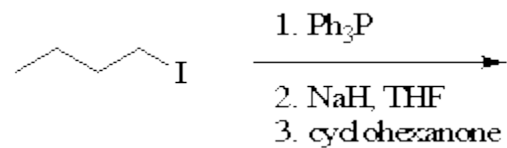
7. What product do you expect from the reaction shown?

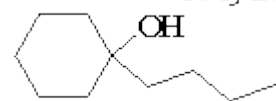
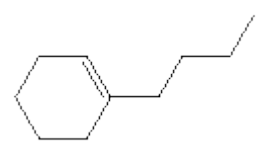




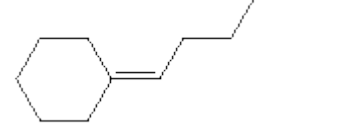
- A. 
- B. 
- C. 
- D. 



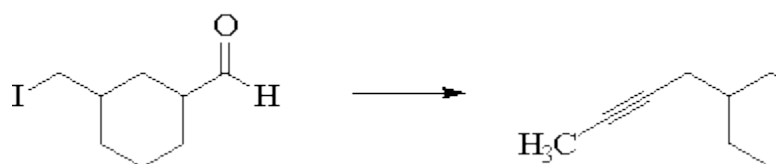
8. Predict the *major* product of the following reaction.

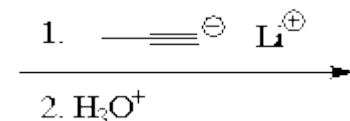
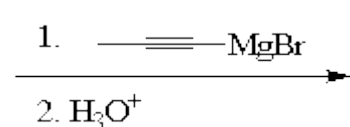
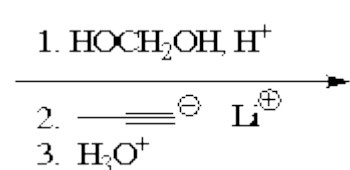
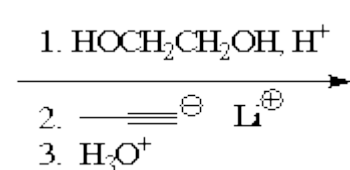


- A. 
- B. 

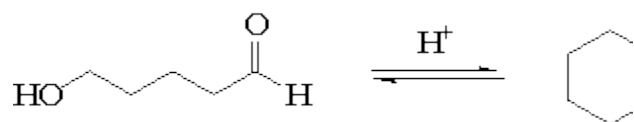
- C. 
- D. 
- E. 

9. What set of reaction conditions is necessary in order to effect the following transformation?



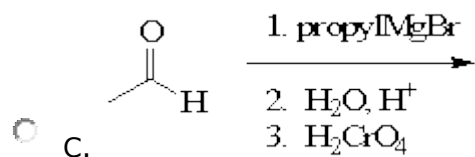
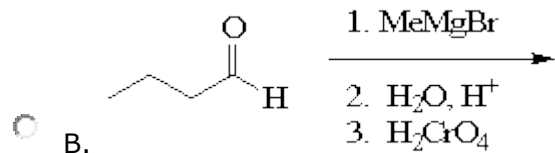
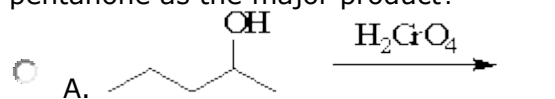
- A. 
- B. 
- C. 
- D. 
- E. Two of the above sets of reaction conditions are correct.

10. To which side, if any, would the following equilibrium lie?



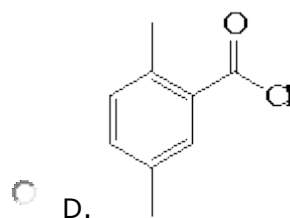
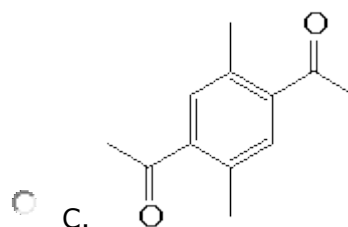
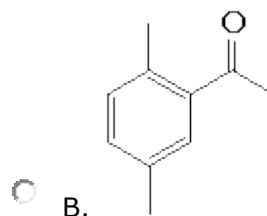
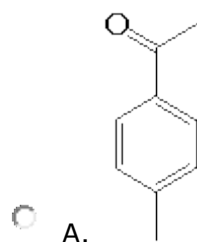
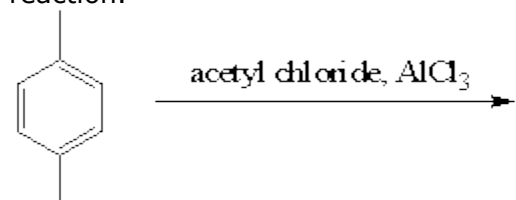
- A. To the right.
- B. To the left.
- C. Equally to the right and left.
- D. There is no way to predict this.
- E. This reaction cannot occur.

11. Which method would produce 2-pentanone as the major product?



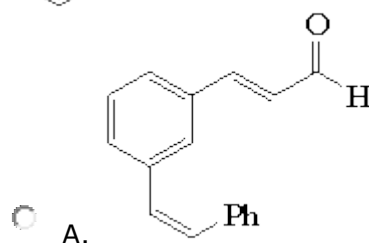
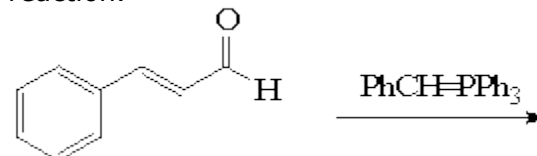
- D. Two of the methods will work.
- E. All three of the methods will work.

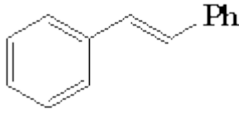
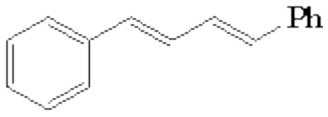
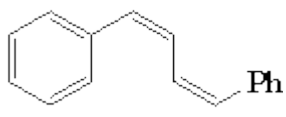
12. Predict the product of the following reaction.



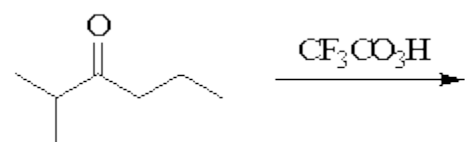
- E. None of the above.

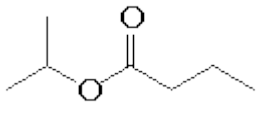
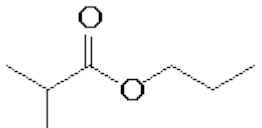
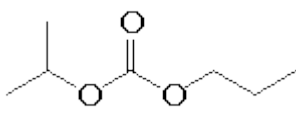
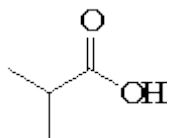
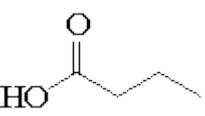
13. Predict the product of the following reaction.



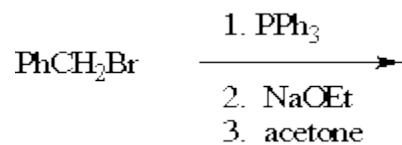
- B. 
- C. 
- D. 
- E. None of the above.


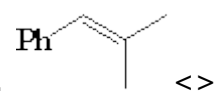
14. Predict the product of the following reaction.



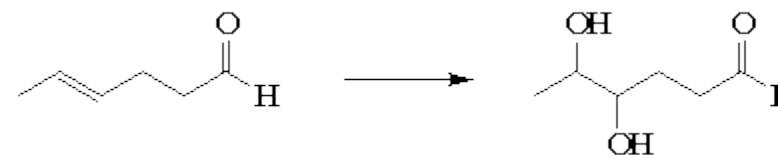
- A. 
- B. 
- C. 
- D. 
- E. 

15. Predict the product of the following reaction.



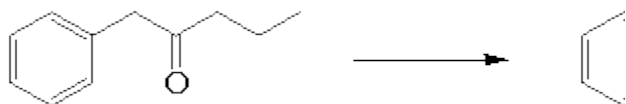
- A. 
- B. $\text{PhCH}=\text{PPh}_3$
- C. $\text{PhCH}_2\text{PPh}_3^{\oplus} \text{Br}^{\ominus}$
- D. 
- E. None

16. What reagents will produce the product as shown?



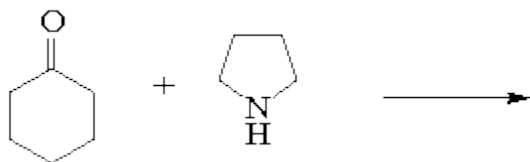
- A. $\xrightarrow{\text{KMnO}_4, \text{KOH}, \text{H}_2\text{O}}$
- B. $\xrightarrow{\begin{matrix} 1. \text{HOCH}_2\text{CH}_2\text{OH}, \text{H}^+ \\ 2. \text{KMnO}_4, \text{KOH}, \text{H}_2\text{O} \\ 3. \text{H}_2\text{O}, \text{H}^+ \end{matrix}}$
- C. $\xrightarrow{\begin{matrix} 1. \text{HOCH}_2\text{CH}_2\text{OH}, \text{H}^+ \\ 2. \text{pcc} \\ 3. \text{H}_2\text{O}, \text{H}^+ \end{matrix}}$
- D. $\xrightarrow{\text{pcc}}$
- E. $\xrightarrow{\begin{matrix} 1. \text{HOCH}_2\text{CH}_2\text{OH}, \text{H}^+ \\ 2. \text{H}_2\text{O}, \text{H}^+ \end{matrix}}$

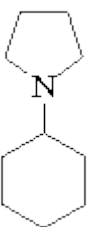
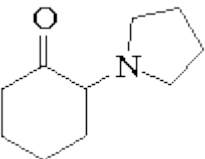
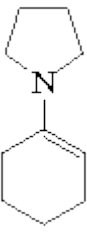
17. Which reagents below will perform the following transformation?

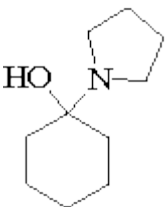


- A. $\text{H}_2\text{O}, \text{H}^+$
- B. $\text{KMnO}_4, \text{KOH}, \text{H}_2\text{O}$
- C. $\text{Zn}(\text{Hg}), \text{HCl}$
- D. H_2, Pd
- E. $\text{Na}, \text{NH}_3 (\text{l})$

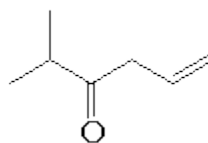
18. Predict the product of the following reaction.



- A. 
- B. 
- C. 

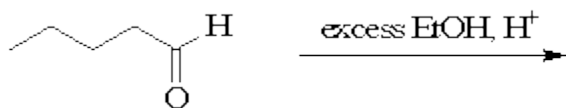
- D. 
- E. None of the above.

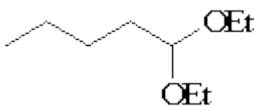
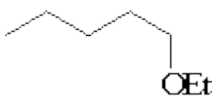
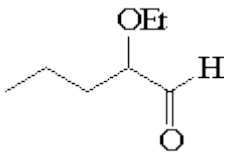
19. Provide an appropriate name for the following ketone.

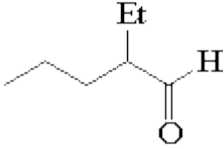


- A. 2-methyl-5-hexen-3-one
- B. 5-methyl-1-hexen-4-one
- C. isopropyl allyl ketone
- D. 1-vinyl-3-methyl-2-butanone
- E. None of the above

20. Predict the product of the following reaction.



- A. 
- B. 
- C. 

- D. 
- E. None of the above.