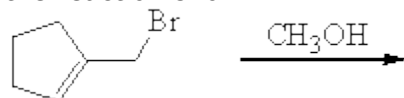


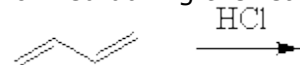
Vollhardt-Schore, Organic Chemistry 5e Ch 14

1. What product(s) do you expect from the reaction shown?



- A.
- B.
- C.
- D.
- E. More than one of these.

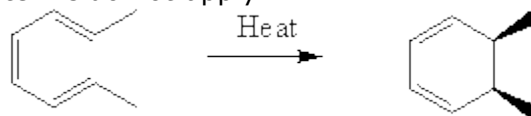
2. What intermediate is preferentially formed during the reaction shown below?



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

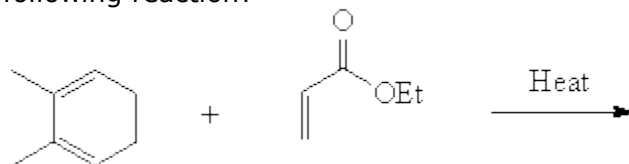
3. Considering the mechanism of the reaction below, which of the following

terms *do not* apply?

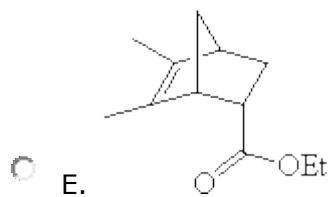


- A. Electrocyclic reaction
- B. Pericyclic reaction
- C. Conrotatory
- D. Disrotatory
- E. Two or more of these statements are not applicable to the reaction above.

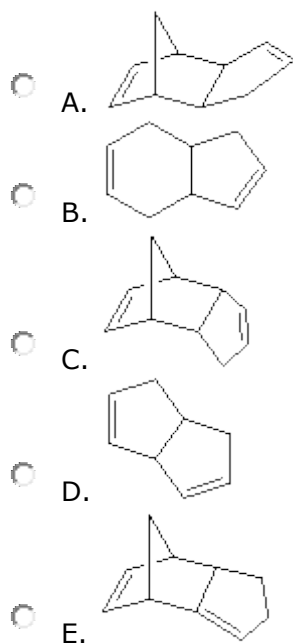
4. What is the major product of the following reaction?



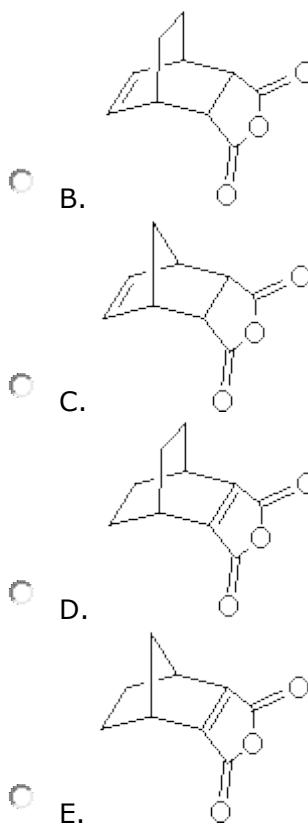
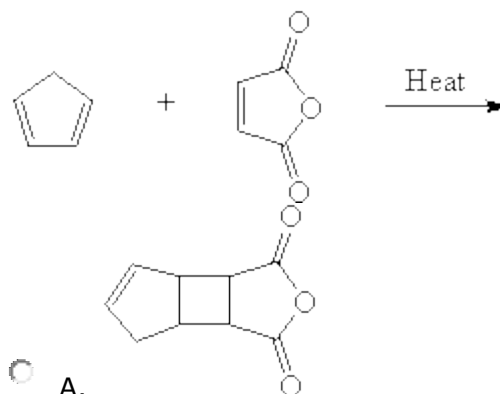
- A.
- B.
- C.
- D.



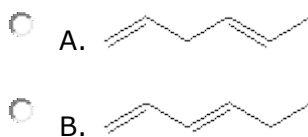
5. 1,3-cyclopentadiene is not commercially available because it undergoes a Diels-Alder reaction with itself. The product, called dicyclopentadiene, is commercially available and in fact quite cheap. In this particular case, heating dicyclopentadiene to about 180°C reverses the reaction to generate cyclopentadiene, which is easily isolated by distillation. What is the structure of dicyclopentadiene?

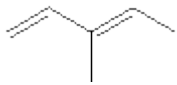
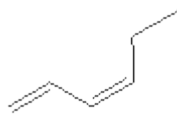



6. What is the *major* product of the following reaction?

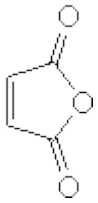
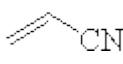
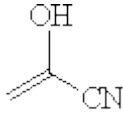
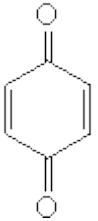


7. Which of the following isomeric dienes would you expect to be the most stable? Hint: There are now three factors to consider.

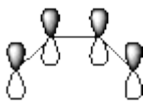
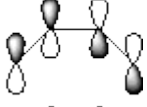
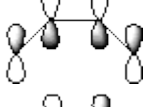
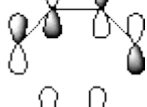



- C. 
- D. 
- E. 

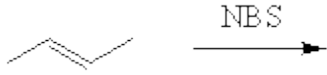
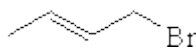
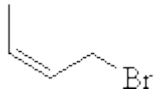
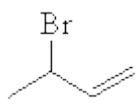
8. Which of the following *will not* be an effective dienophile in the Diels-Alder reaction?

- A. $\text{EtO}_2\text{C}-\text{C}\equiv\text{C}-\text{CO}_2\text{Et}$
- B. 
- C. 
- D. 
- E. 

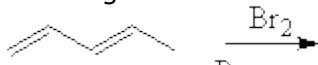
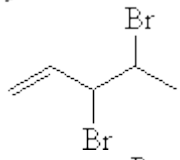
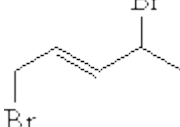
9. Which of the following represents the HOMO (Highest Occupied Molecular Orbital) for 1,3-butadiene?

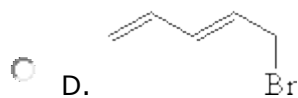
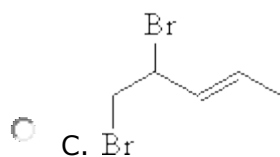
- A. 
- B. 
- C. 
- D. 
- E. 

10. What product(s) do you expect from the reaction shown?

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

11. Which is *not* a possible product of the following reaction?

- 
- A. 
- B. 



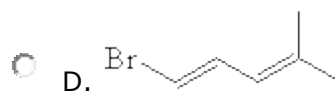
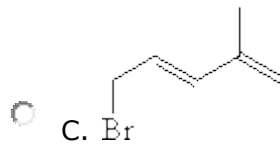
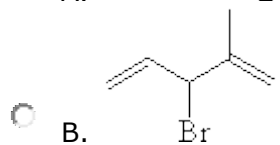
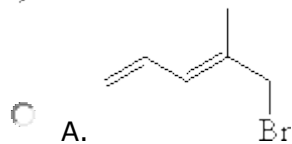
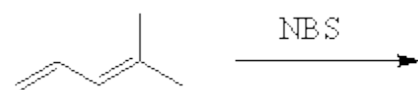
E. All four compounds above are products.

12. Which compound would have the *longest* wavelength in a UV spectrum?



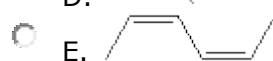
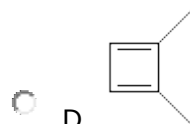
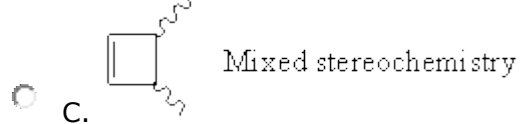
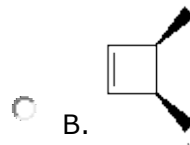
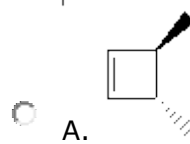
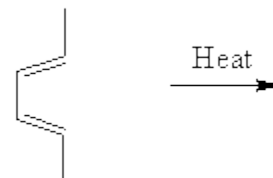
E. Not possible to determine.

13. Which compound is *not* a product of the following reaction?

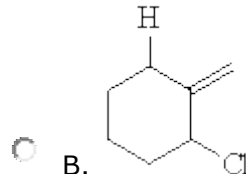
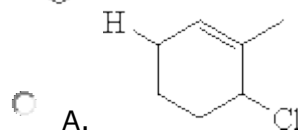
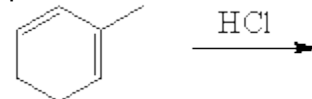


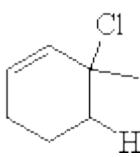
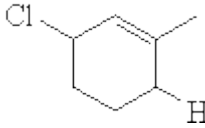
E. All the molecules above are products.

14. Predict the product of the following reaction.

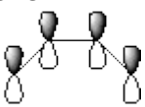
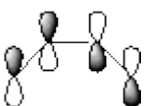
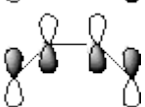
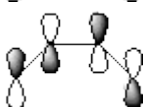
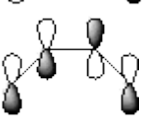


15. Which compound below is not a product of the following reaction?

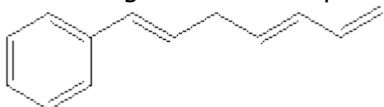
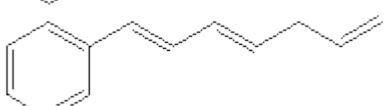
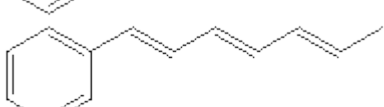
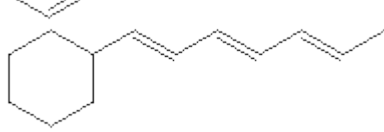


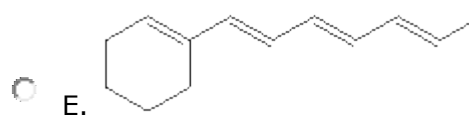
- C. 
- D. 
- E. All of the above are products.

16. Which of the following is the LUMO of butadiene?

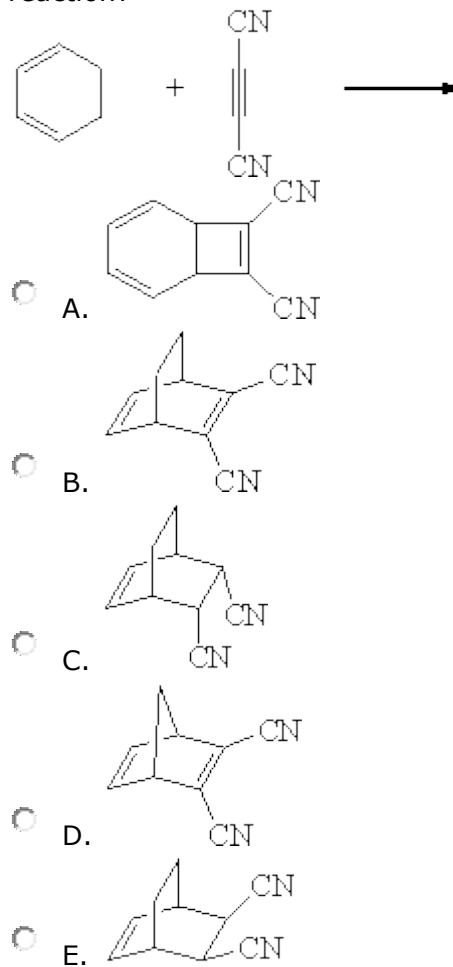
- A. 
- B. 
- C. 
- D. 
- E. 

17. Which of these compounds has the longest wavelength in the UV spectrum?

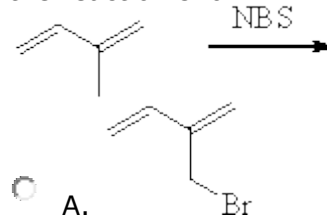
- A. 
- B. 
- C. 
- D. 

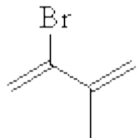
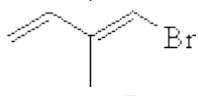
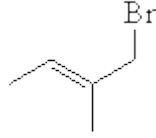
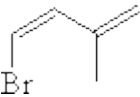


18. What is the product of the following reaction?

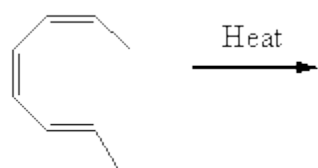


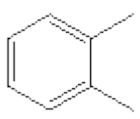
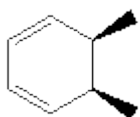
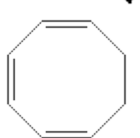
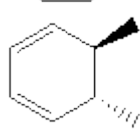
19. Which of the following is a product of the reaction shown?



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

20. Which is the product of the reaction shown?



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