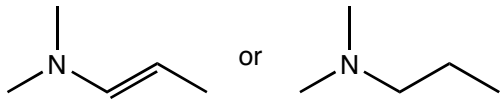
Name _____ Test 4

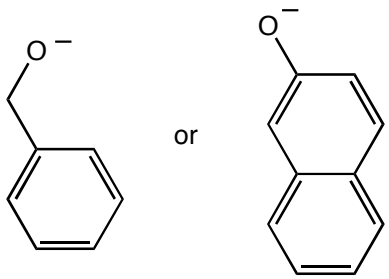
PHYS 0201 (Organic) Fall 2005

1. (6 pts. each) For each of the following pair of molecules, determine which molecule is the stronger base.

a.



b.



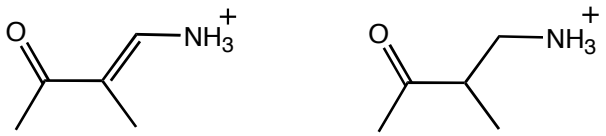
1. _____

2. _____

3. _____

4. _____

2. (10 pts.) Explain why the molecule on the left is a stronger acid that the molecule on the right.



5. _____

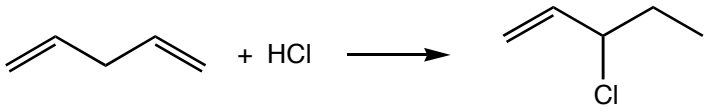
6. _____

7. _____

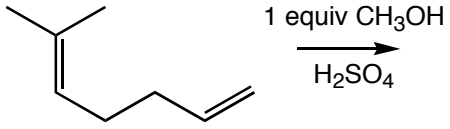
8. _____

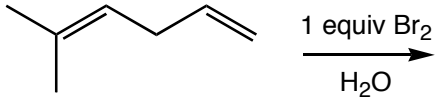
9. _____

3. (10 pts) Explain why the addition of HCl to 1,4-pentadiene can produce 3-chloro-1-pentene.



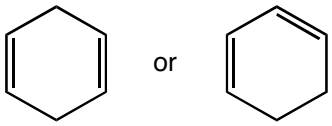
4. (6 pts. each) Predict the major and minor products of the following electrophilic addition reactions. Remember to indicate which products are the major and minor products. Ignore the stereochemistry of the products.

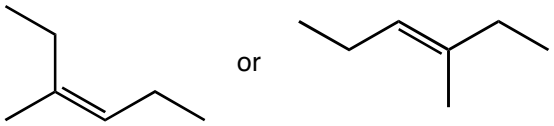
a. 

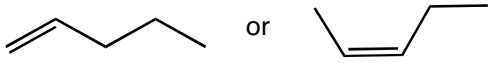
b. 

5. (6 pts.) Draw the structure of *Z*-2-methyl-1,3-hexadiene.

6. (4 pts. each) For each of the following pairs of alkenes determine which alkene would be more thermodynamically stable.

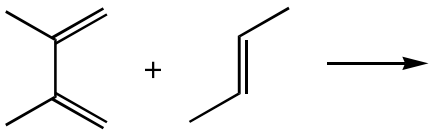
a. 

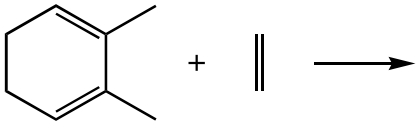
b. 

c. 

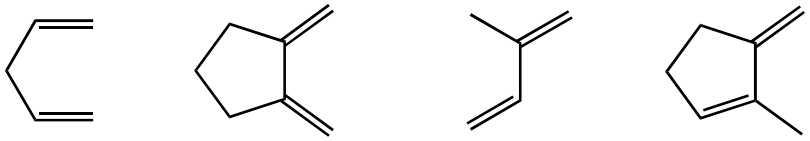
d.

7. (4 pts each) Determine the products of the following reactions. Remember to consider the stereochemistry of the product(s) where appropriate.

a. 

b. 

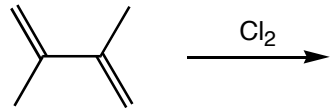
8. Four dienes are drawn below.

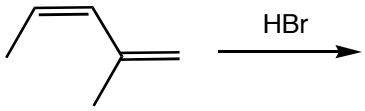


a. (5 pts.) Which of these molecules drawn above cannot play the role of the diene in a Diels-Alder reaction? Explain you choice(s).

b. (5 pts.) Which would be the most reactive diene for a Diels-Alder reaction? Explain.

9. (4 pts. each) Determine the products of the following reactions, and label the kinetic and thermodynamic products of the reactions. Ignore any stereochemistry of the products might have.

a. 

b. 

c.