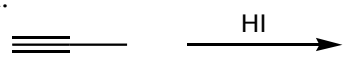
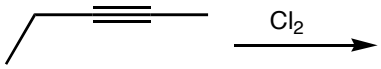
Name _____ Test 4
PHYS 0201 Fall 2003

1. (20 pts.) Determine the product(s) of the following reactions. Indicate stereochemistry where appropriate.

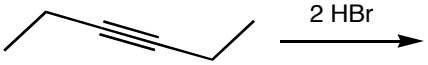
a.



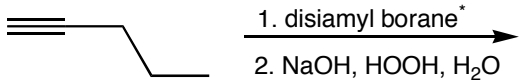
b.



c.



d.



*in class we used BH_3

2. (8 pts.) Identify whether the following reactions occur via anti or syn additions (or both).

a. The reaction of an alkyne with H_2 and a Pt catalyst.

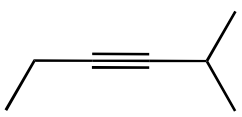
b. The reaction of an alkyne with Na and NH_3.

c. The reaction of an alkyne with Br_2.

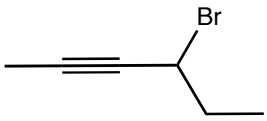
d. The reaction of an alkyne with Cl_2.

3. (8 pts.) Provide IUPAC names for the following compounds.

a. _____

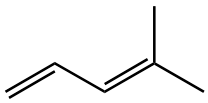


b. _____

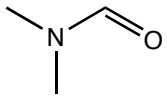


4. (16 pts.) Provide resonance structures for the following molecules.

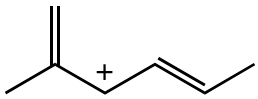
a.



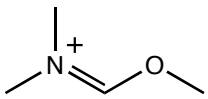
b.



c.

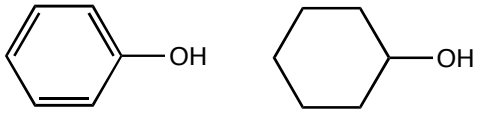


d.

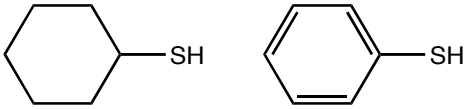


5. (12 pts.) For each of the following pairs of molecules identify the stronger acid.

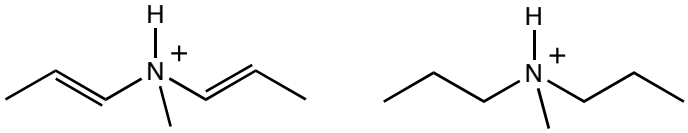
a.



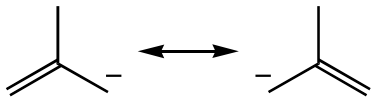
b.



c.

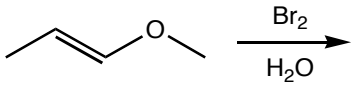


5. (10 pts.) The following carbanion has two resonance forms. Draw the resonance hybrid.

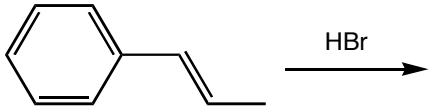


6. (10 pts.) Determine the major product(s) of the following reactions.

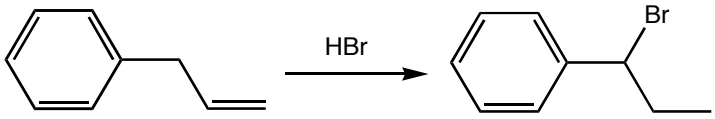
a.



b.

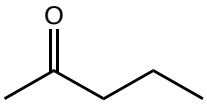


7. (8 pts.) Draw a mechanism that demonstrates the route through which the following reaction proceeds.

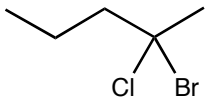


8. (24 pts.) Make the following molecules from acetylene (HCCH) and any other reagents that are required.

a.



b.



c.