

Name: _____

Chemistry 116 Sec. A (7:50-8:50)
Exam No. 3
“Alkynes, Conjugation, & MO Theory”
November 5, 2004

Instructions: You will have 60 min. to complete the exam. At the 60 min. mark, I will request that all remaining test takers cease writing, turn their exams over, and pass them to their rightmost isle. If you finish within 55 min. you may turn in the exam at the front of the room prior to leaving. If you finish in the final 5 min. of class, please turn your exam over and remain seated until I call for the remaining exams to be turned in. *In fairness to all, anyone still working on the exam after “time” is called will receive a grade of zero!*

Be sure to read the instructions for each question. It may be helpful to skim the entire exam and solve the easier questions first.

Exam Agreement: I, _____, have read and agree
(Please print)

to abide by the instructions above. On my honor, I have neither given nor accepted any help during this exam.

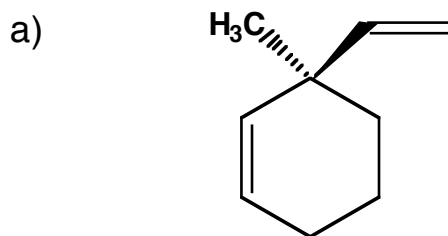
Signature: _____

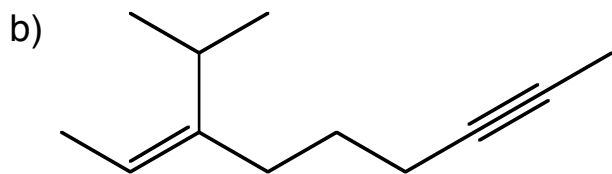
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**DO NOT OPEN THIS EXAM UNTIL
INSTRUCTED TO DO SO**

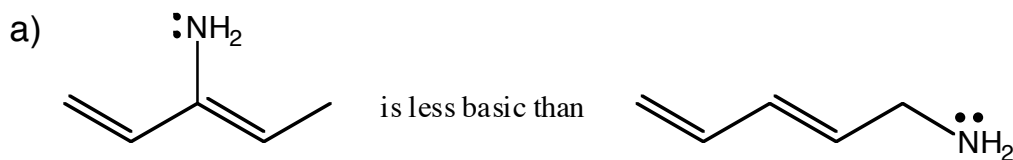
Name: _____

1) Provide an unambiguous name (IUPAC or common) for each of the following molecules. (14 points)





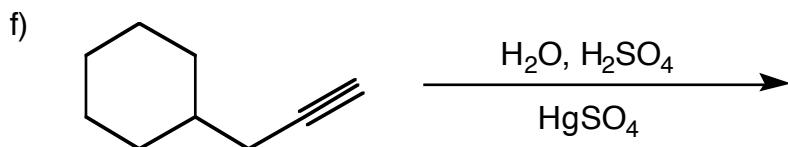
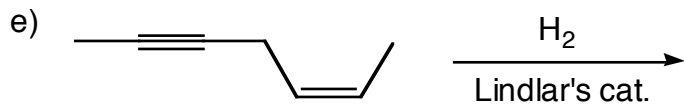
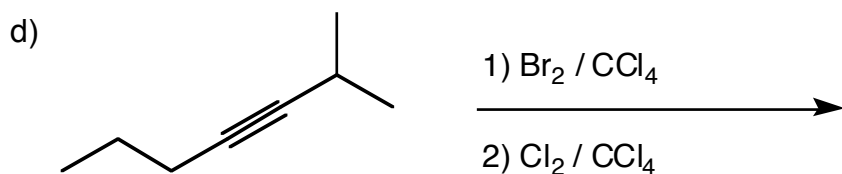
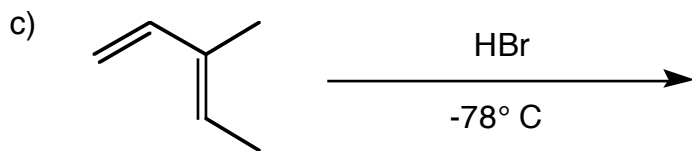
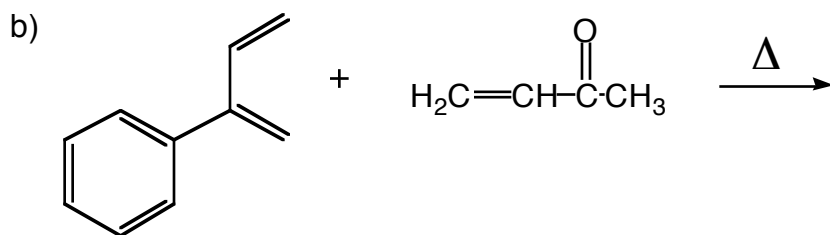
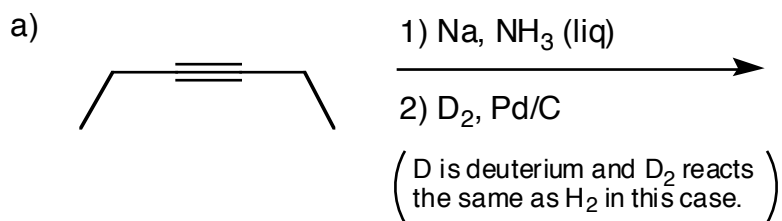
2) Explain the following trends *using pictures* and only a few words. (12 points)



b) The *enol* form of  is more stable than its *keto* form.

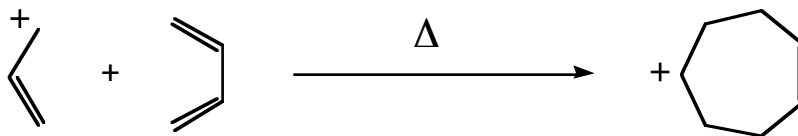
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3) Predict the *major* organic product of each of the following reactions. If more than one product is equally favored, draw each product. (36 points)



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- 4) Provide a mechanism for the following hypothetical pericyclic reaction. Then use MO theory to determine whether it or not it could take place. *Note: you will need ample illustrations to obtain full credit for this problem.* (12 points)



- 5) Propose a synthesis (sequence of reactions) that will accomplish the following transformation. *Be sure to include the products of each step for full credit.* (10 points)

Hydrocarbons of
3 carbons or less

