

First Exam
CHEM 256 – Organic Chemistry II
Prof. Bastin
Spring 2016

Name _____

Section _____

1. DO NOT START this exam until you are instructed to begin.
2. There are SEVEN pages including this cover sheet - make sure they are all here!
3. Provide *CLEAR, CONCISE* answers using unambiguous, carefully drawn structures and mechanisms for the appropriate questions. *Be sure to read each question VERY CAREFULLY.*
4. Do not provide mechanisms for synthesis and product prediction problems.
5. You may only use a pen or pencil and the materials provided in this packet on this exam.
6. If you have papers and/or books with you, they are to be left on the floor **AT THE FRONT OF THE ROOM**. If you need scrap paper please ask.
7. Cell phones must be **OFF and placed on the table at the FRONT of the ROOM**.

1) _____/30 pts

2) _____/30 pts

3) _____/15 pts

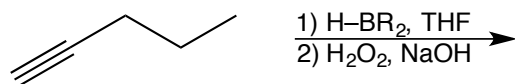
4) _____/10 pts

Total: _____/100 pts

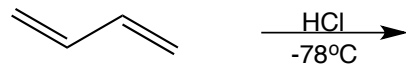
5) _____/15 pts

- 1) (30 pts) Draw the MAJOR product(s), if any, of the following reactions. Indicate stereochemistry where relevant.

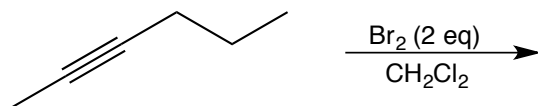
a)



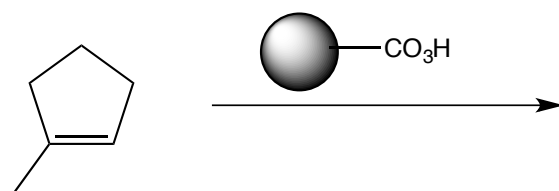
b)



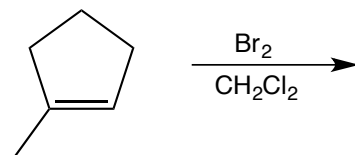
c)



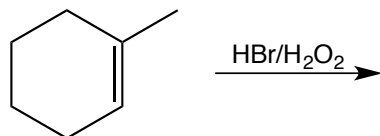
d)



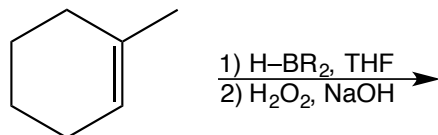
e)



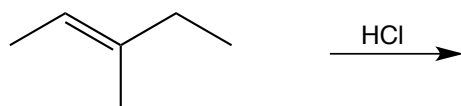
f)



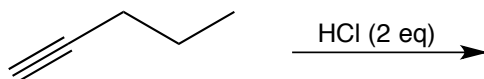
g)



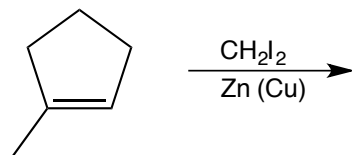
h)



i)

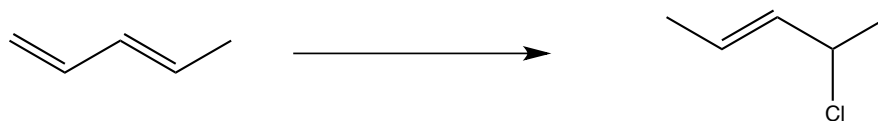


j)

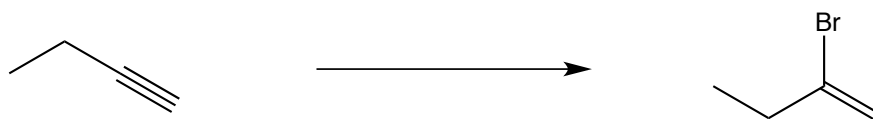


2) (30 pts) Provide the reagents needed to bring about the following transformations.

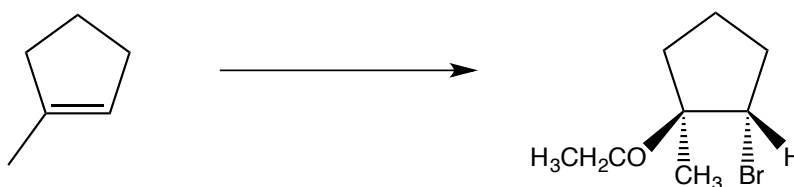
a)



b)



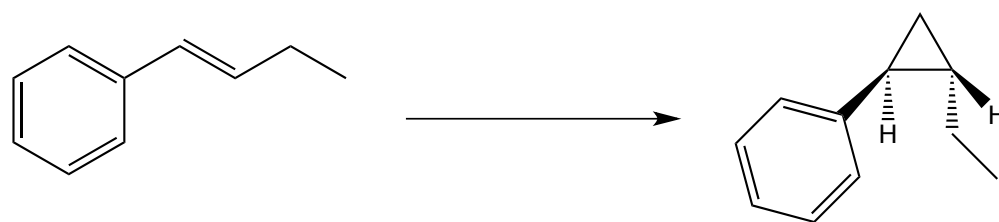
c)



d)



e)



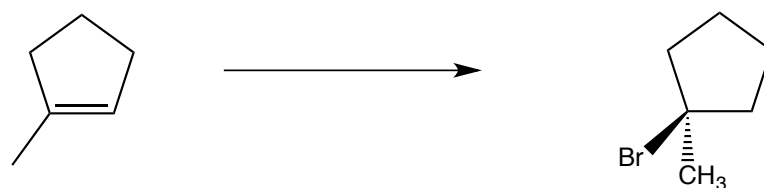
f)



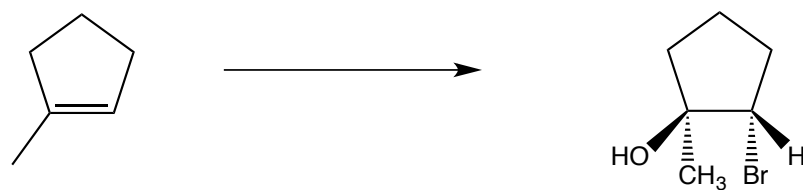
g)



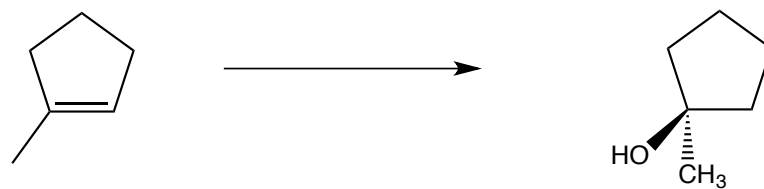
h)



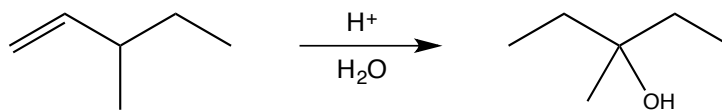
i)



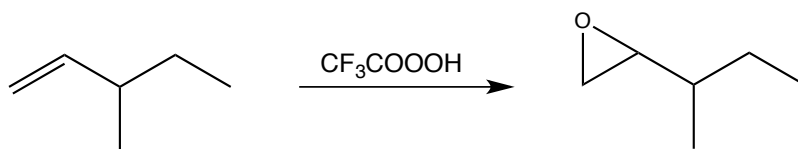
j)



- 3) (15 pts) Provide a curved-arrow mechanism for the following reaction. Additionally, provide a mechanistic explanation for the regiochemistry observed in the product.



4) (10 pts) Provide a curved-arrow mechanism for the following reaction.



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- 5) (15 pts) A student attempted to brominate the double bond in 4-penten-1-ol, but ended up with the following cyclic ether instead. Propose a mechanism for the formation of this product.

