

Name _____
Examination I Retake

Slayter Box _____
Thursday, October 4, 2012

Organic Chemistry II (CHEM 251-03)

Dr. Fantini

***OPTIONAL RETAKE
EXAM 1***

Please do not open until instructed

You have two hours to complete this examination.

Organic Chemistry (CHEM 251-03)

Dr. Fantini

Examination I

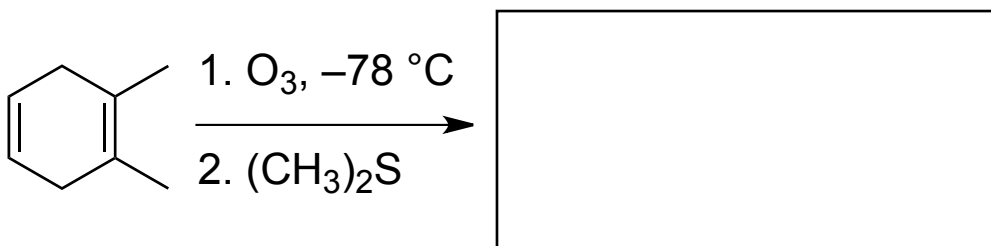
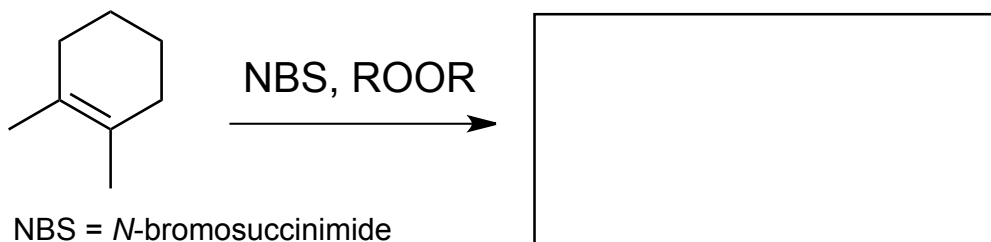
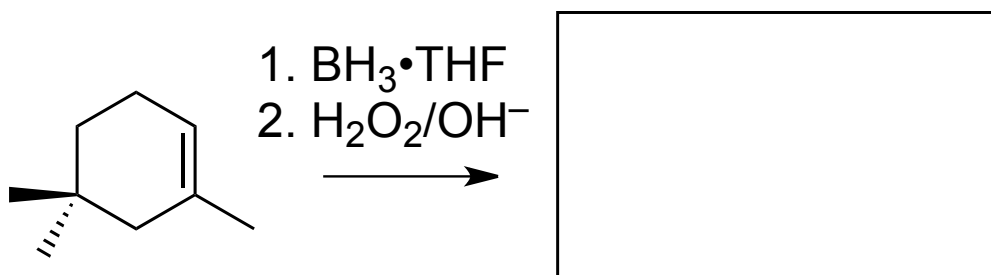
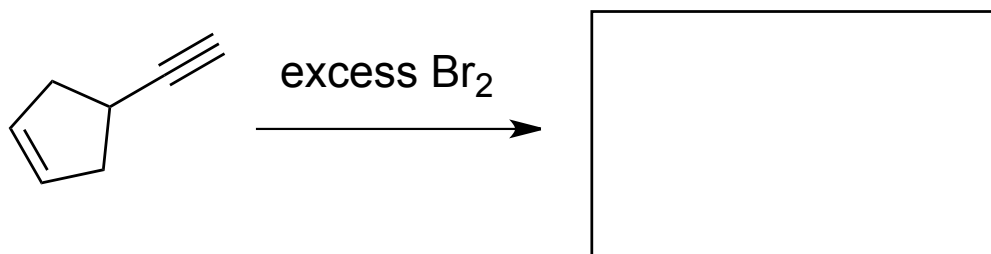
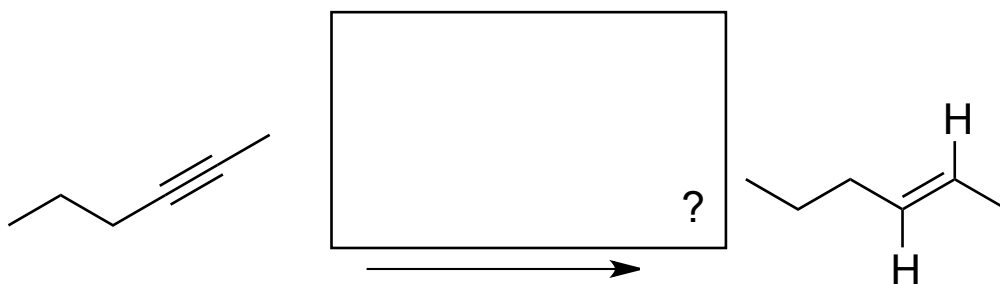
OPTIONAL RETAKE EXAM 1

Notes:

- This exam consists of **7 questions**. Please check to make sure that you have a complete copy of the exam.
 - ***Please do not simply give me answers. Give me well-supported answers where needed. Answers that are not backed by explanations will receive minimal credit.***
 - Please write clearly; if I can't read your answer, I can't give you credit for your answer.
 - Please note that different questions are worth different numbers of points. Plan your time accordingly.
 - Remember to include units and significant figures where appropriate.
 - No books or notes are to be used on this exam.
 - Please do NOT share calculators; if you need a calculator but do not have one, please let me know!
- *If you feel that you would be better able to answer **any** question if you had additional information, please do not hesitate to ask for it.* I will happily provide any information that I feel will help you answer the question without compromising the efficacy and fairness of the test.

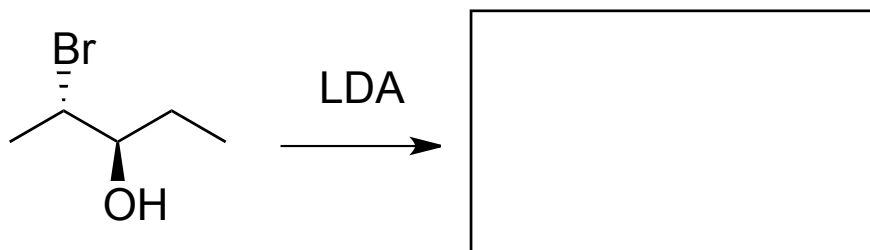
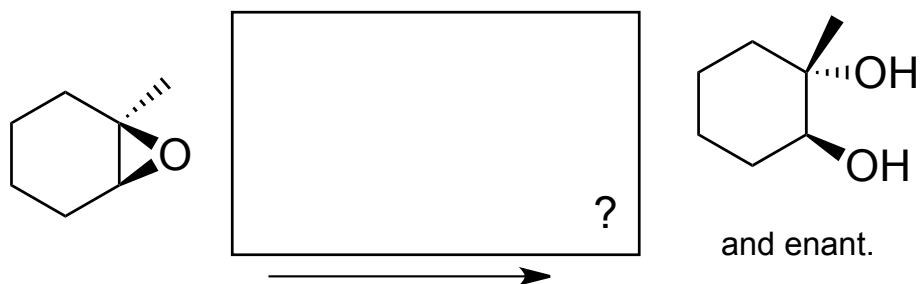
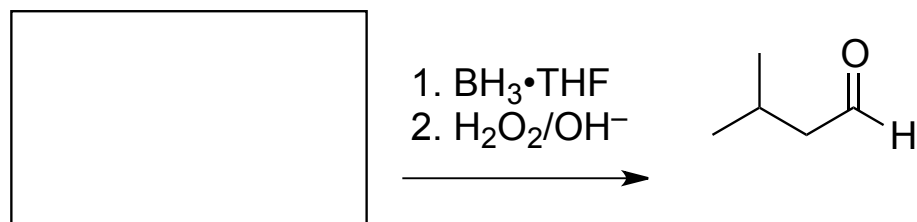
Question	Possible	Score
1	30	
2	16	
3	4	
4	10	
5	16	
6	8	
7	16	
EC (synthesis)	4	
EC (seminar)	1	1
<i>TOTAL</i>	100	
	Approx. Letter:	

301. Please provide the missing reagent or product. All are single-step unless stated otherwise. *This problem extends over three pages. Room for work is at the bottom of each page. Only answers in boxes are graded! IT IS IMPORTANT TO DESIGNATE STEREOCHEMISTRY*

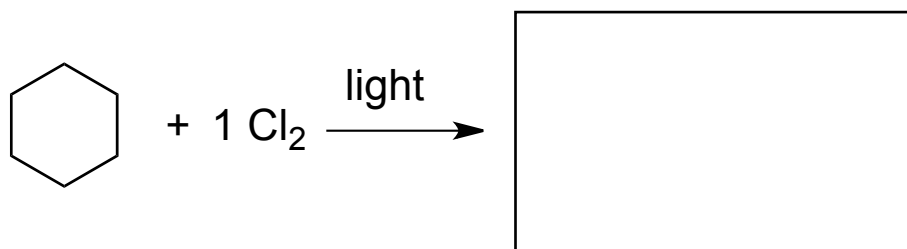
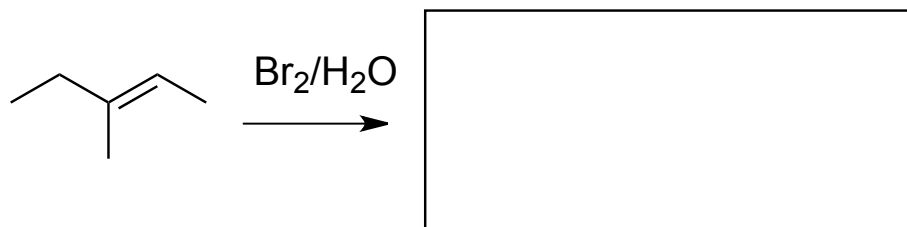


IT IS IMPORTANT TO DESIGNATE STEREOCHEMISTRY

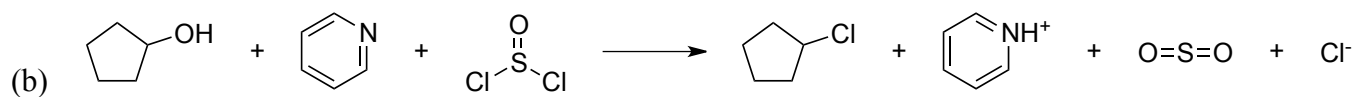
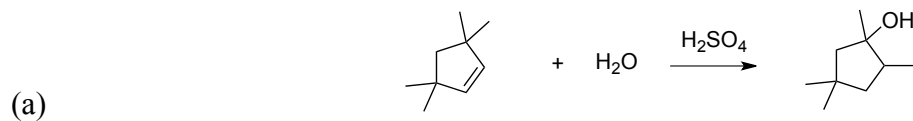
Question 1, continued.

IT IS IMPORTANT TO DESIGNATE STEREOCHEMISTRY

LDA = lithium diisopropylamide

**IT IS IMPORTANT TO DESIGNATE STEREOCHEMISTRY**

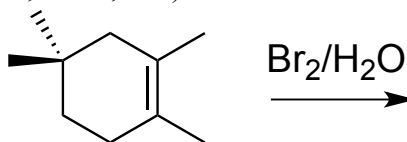
162. Please provide the step-by-step electron-pushing mechanism for:



3. Please give a structure for each name shown.

3,4-diethyl-6-methylcyclohex-1-ene	(E)-3-methylpenta-2,4-dien-1-ol
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104. For the reaction shown below, draw all of the products, and show relationships among all products (e.g. enantiomers, diastereomers, meso, etc.).



165. Outline a synthesis of the following compounds starting with the given reactant and any reagents as needed. Carbons must come from the given reactants. **CHOOSE ANY TWO (2) OF THE THREE (3) PROBLEMS.** If you designate which 2 you want graded for regular credit, AND you have not left any questions blank on the exam, the third problem will be graded for as much as 4 points of extra credit.



86. The following reaction is a radical chain that begins with the generation of the bromine radical ($\text{Br}\cdot$) by a series of two initiation steps (not shown).

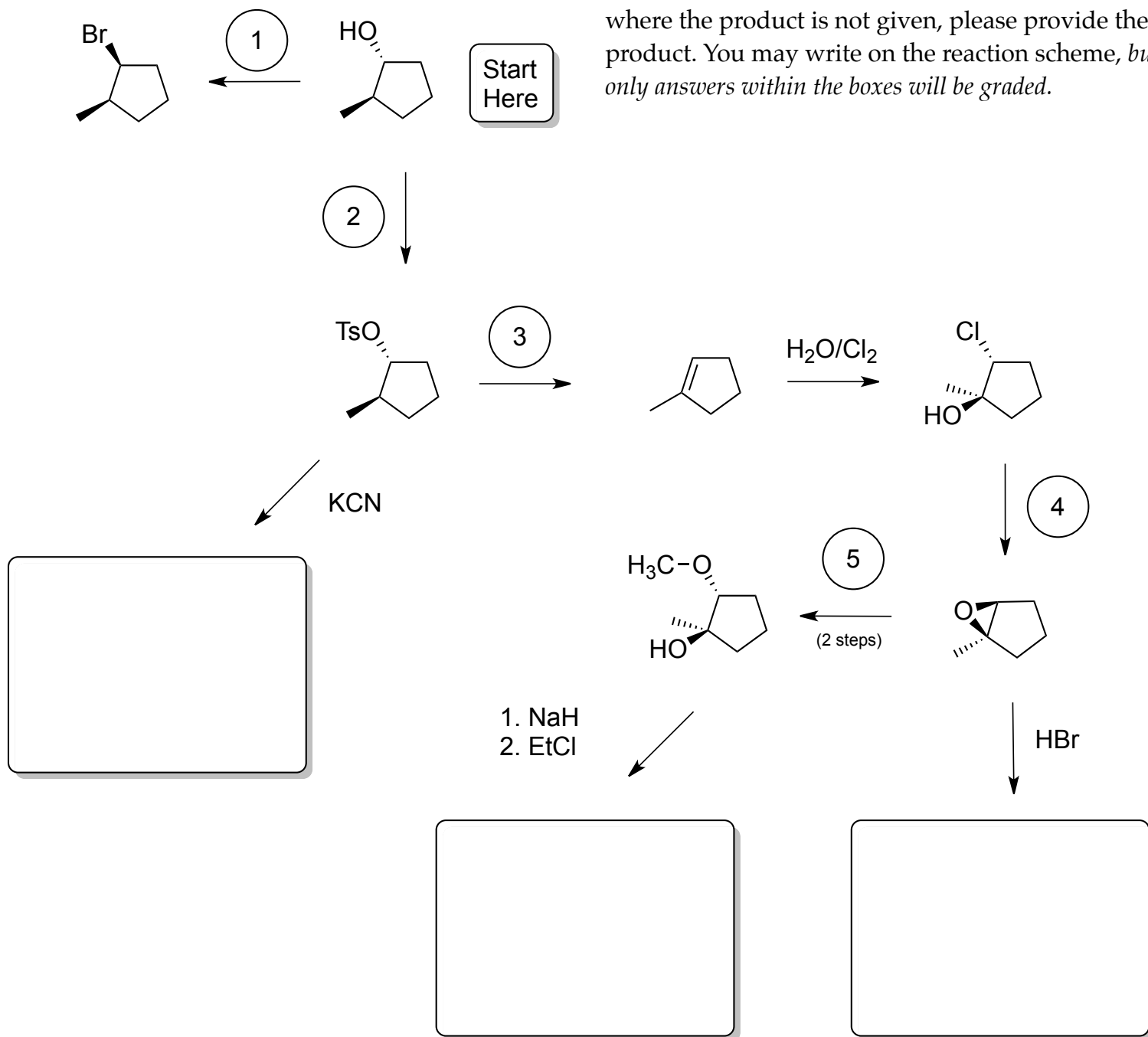
Write the propagation steps for the mechanism of the reaction. Show that the steps added together give the overall reaction.

Don't include initiation or termination steps.



167.

For the steps labeled 1 through 5, give the reagent needed for the transformation. For the reactions where the product is not given, please provide the product. You may write on the reaction scheme, *but only answers within the boxes will be graded.*



(1)

(2)

(3)

(4)

(5)