

**UCI DEPARTMENT OF ORGANIC CHEMISTRY PEER TUTORING REVIEW  
SESSION FEEDBACK EVALUATION**

|   |                    |
|---|--------------------|
| <b>Quarter: Winter 2019</b>                                   | <b>Date:</b>       |
| <b>Class: King Chem 51B</b>                                   | <b>Review for:</b> |
| <b>Tutors' Names: Daniel Lomboy, Nadeen Nima, Erinna Thai</b> |                    |

|   |                   |          |                           |       |                |
|---|-------------------|----------|---------------------------|-------|----------------|
| <b>COMMENTS/FEEDBACK (VERY IMPORTANT!) Name: Daniel Lomboy</b>            |                   |          |                           |       |                |
| Name: Nadeen Nima   |                   |          |                           |       |                |
| Name: Erinna Thai   |                   |          |                           |       |                |
| <b>What worked best?</b>  |                   |          |                           |       |                |
| <b>What could be improved?</b>  |                   |          |                           |       |                |
| <b>What would you like to see next time?</b>                              |                   |          |                           |       |                |
|   | Strongly Disagree | Disagree | Neither Agree or Disagree | Agree | Strongly Agree |
| <b>This review was interactive and engaging.</b>                          |                   |          |                           |       |                |
| <i>Comments</i>   |                   |          |                           |       |                |
| <b>The presentation volume was acceptable.</b>                            |                   |          |                           |       |                |
| <i>Comments</i>   |                   |          |                           |       |                |
| <b>The presentation was visually clear and logically organized.</b>       |                   |          |                           |       |                |
| <i>Comments</i>   |                   |          |                           |       |                |
| <b>The review improved/reinforced your understanding of the material.</b> |                   |          |                           |       |                |
| <i>Comments</i>   |                   |          |                           |       |                |
| <b>The quality of the review packet was</b>                               |                   |          |                           |       |                |
| <i>Comments</i>   |                   |          |                           |       |                |

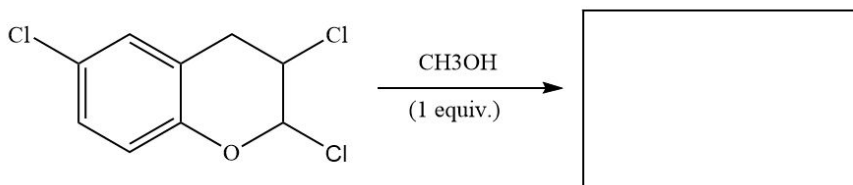
**Please fill out this evaluation, even if you plan to leave early. Thank you very much.**

**This page is intentionally left blank on purpose. You can use this page as scratch work if you want.**

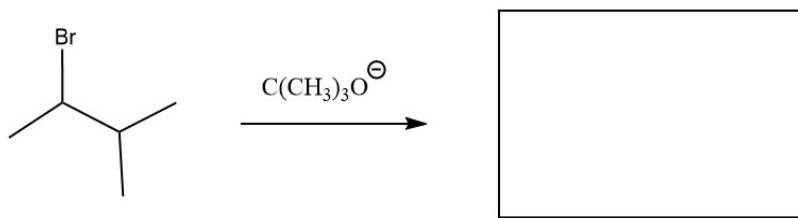
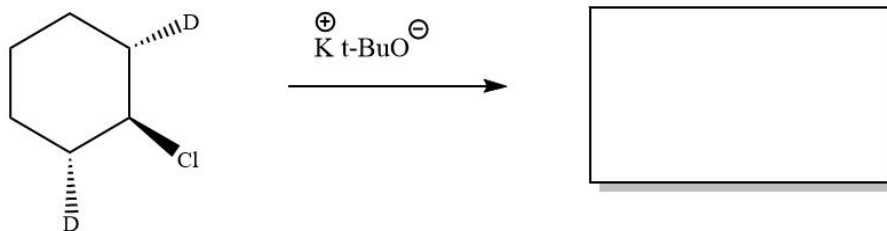
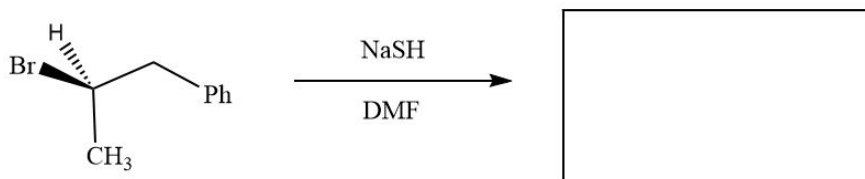
**Chem 51B Midterm 1 Review Session:**

**I. Synthesis/Predicting Products (DL)**

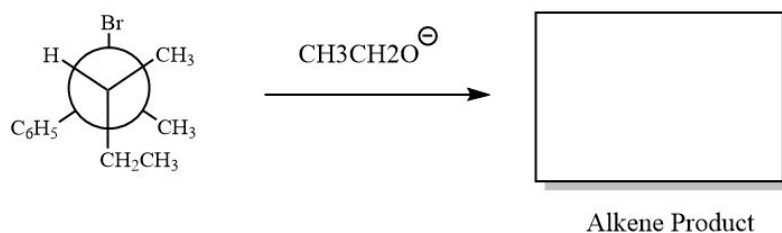
1. If the following molecule is treated with 1 equivalent of methanol, what would the following **substitution** product?



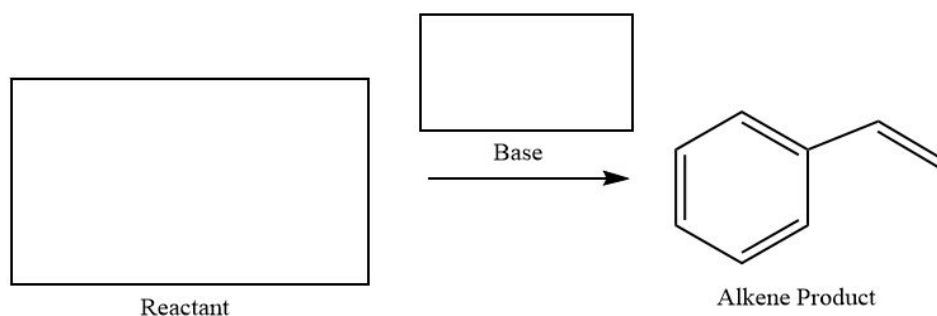
2. Predict the **major product** for each of the following reactions. If a product yields enantiomers, notate as “+E”.



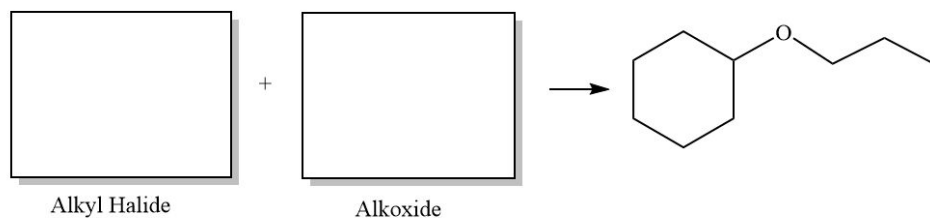
3. For the following newman projection, draw the **major E2 product** formed (4 points):



4. Propose a **reactant** and **base** to produce the following alkene product:

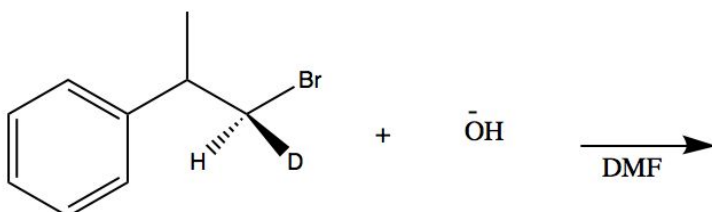


5. Show a possible alkoxide and alkyl halide that can be used to synthesize the following molecule by Williamson Ether Synthesis:

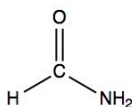


## II. Mechanism/Rate of Reaction (NN)

1. For the following reaction:



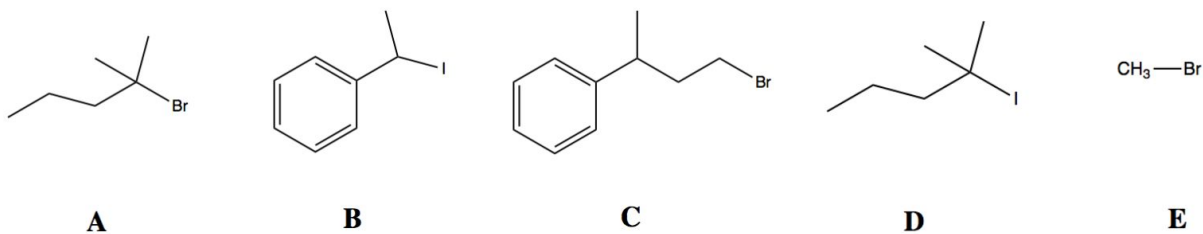
- a. Draw the correct mechanism (using curly arrows) and the correct product. Pay attention to stereochemistry if necessary, and make sure to include all lone pairs and charges!
- b. Draw the structure of the transition state for this reaction.
  
  
  
  
  
  
  
  
  
  
- c. Is this a reversible reaction? \_\_\_\_\_ Why or why not?
  
  
  
  
  
  
  
  
  
  
- d. What would happen to the reaction rate if the solvent was changed from DMF to formamide? \_\_\_\_\_
  - i. Hint: the structure of formamide is as follows:



- e. What would happen to the reaction rate if the leaving group was changed from  $\text{Br}^-$  to  $\text{Cl}^-$ ?  
\_\_\_\_\_
- f. What would happen to the reaction rate if the nucleophile was changed from  $\text{OH}^-$  to  $\text{PhSe}^-$ ? \_\_\_\_\_

### III. Structure/Reactivity (NN)

1. For the following set of compounds, write the letter or letters that correctly answer the questions.



- Which compound forms the most stable carbocation after ionization? \_\_\_\_\_
- Which compound(s) are not expected to undergo an SN1 reaction? \_\_\_\_\_
- Which compound(s) do not undergo an E2 reaction?
- Which compound(s) undergo an E2 reaction but not an SN2 reaction (with NaOCH<sub>3</sub> in methanol)? \_\_\_\_\_
- Which compound can undergo E1, E2, SN1, and SN2 reactions? \_\_\_\_\_

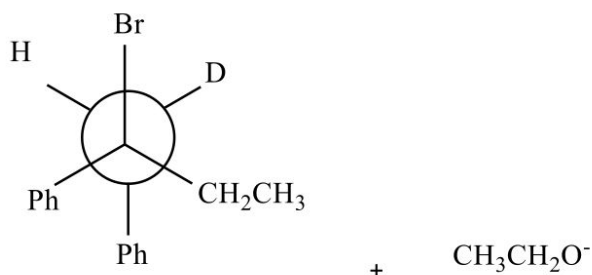
2. Rank the following alkenes in order of decreasing stability. (1 = most stable)



#### IV. More Practice (ET)

1. For each of the following reactions, do the following:
  - Determine the **major** type of reaction that the reaction favors.
  - Characterize the alkyl halide (what type, branched, etc) and the nucleophile/base (how good is it as either)
  - Determine the **major** product (favored product) of the reaction and draw the products maintaining correct stereochemistry. If there is racemization, draw both of those products.
  - Draw the mechanism of the reaction that confers to how the major product is formed.

Reaction 1:



\*For this reaction, turn the Newman Projection into the correct form for elimination before proceeding.

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Reaction 2:

