

Chemistry 2542, Fall 2016

Quiz 1

(30 points)

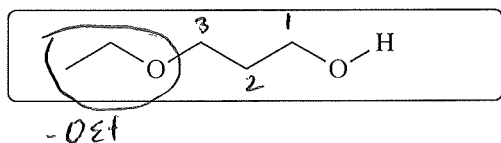
Key

Important notes:

- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be posted on eGradebook; graded Scantron forms will not be returned to students.

Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

1. What is the **IUPAC name** for the compound shown in the box?



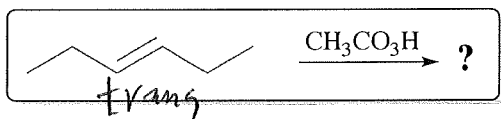
A) 1,2-diethoxyethane

B) 4-propoxy-1-propanol

C) 3-ethoxy-1-propanol

D) dipropyl ether

2. What is the **main product** of the reaction shown in the box?



A) *cis*-2,3-diethyloxirane

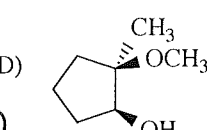
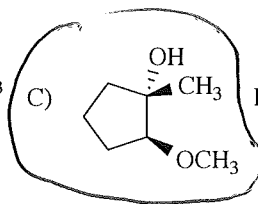
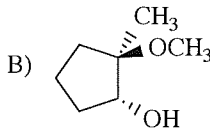
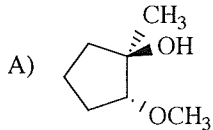
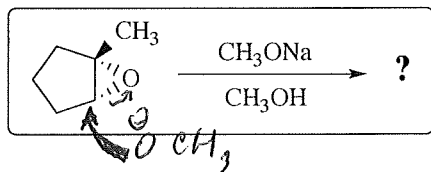
B) *trans*-2,3-diethyloxirane

C) *trans*-3,4-diethyloxirane

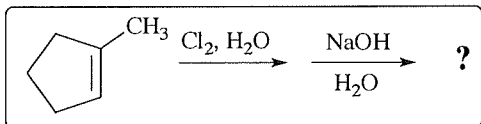
D) *cis*-3,4-diethyloxirane



3. What is the **main product** of the reaction shown in the box?



4. What is the **main product** of the sequence of reactions shown in the box?

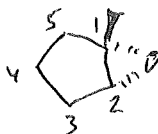


A) *cis*-2-chloro-1-methylcyclohexanol

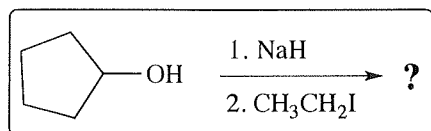
B) *trans*-2-chloro-1-methylcyclohexanol

C) 1-methyl-2,3-cyclopentanoxirane

D) 1-methyl-1,2-epoxycyclopentane



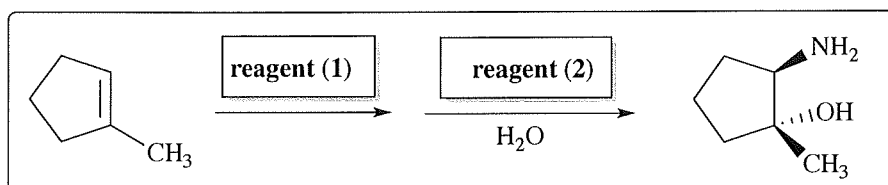
5. What is the **main product** of the sequence of reactions shown in the box?



- A) ethoxycyclopentane
 C) 1,2-epoxycyclopentane

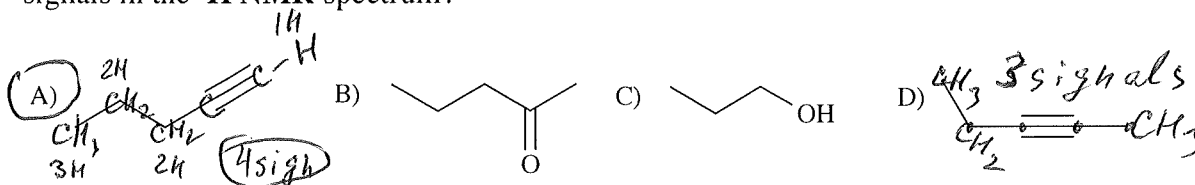
- B) *trans*-2-ethoxycyclopentanol
 D) *cis*-2-ethoxycyclopentanol

6. Which sequence of **reagents** can be used for the reaction shown in the box?

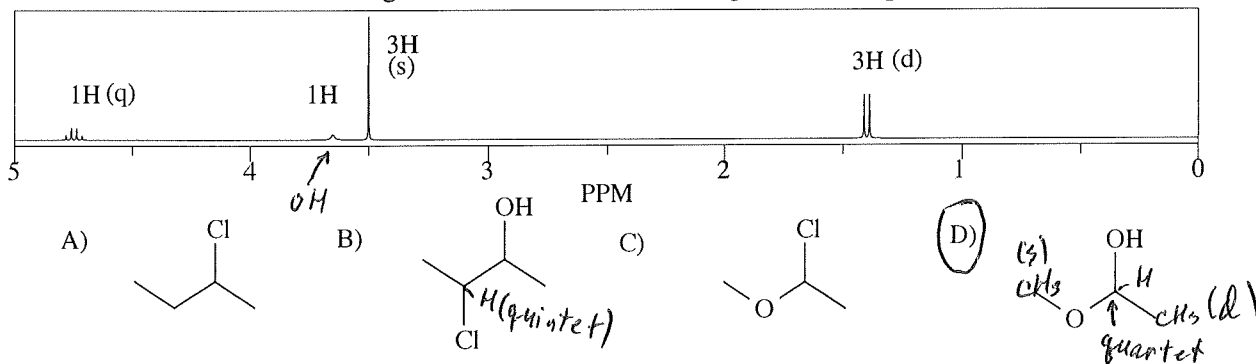


- A) (1) $\text{CH}_3\text{CO}_3\text{H}$, (2) NH_3
 B) (1) NH_3 , (2) $\text{CH}_3\text{CO}_3\text{H}$
 C) (1) Cl_2 , H_2O , (2) CH_3NH_2
 D) (1) NaOH , (2) NH_3

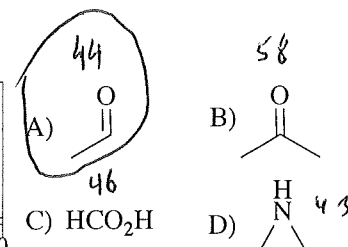
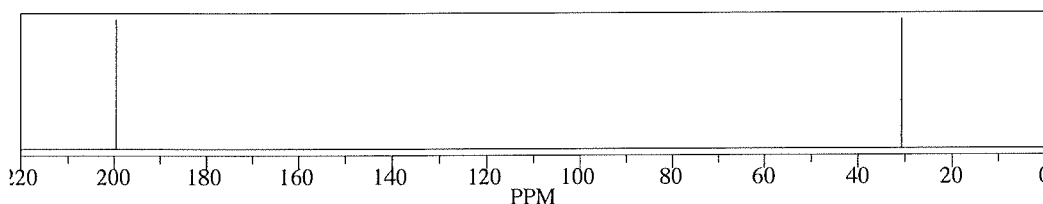
7. Which of the following compounds will have the **characteristic IR** peak at about 2200 cm^{-1} and four signals in the ^1H NMR spectrum?



8. Which molecule that is in agreement with the following ^1H NMR spectrum?



9. Which one of the following compounds has the molecular peak $M^+ = 44$ in the mass spectrum (atomic weight of C is 12, O 16, H 1) **and** the following ^{13}C NMR spectrum:



10. Which of the following compounds will have the most **deshielded** carbon atom?

