

Chemistry 2542, Fall 2016

Quiz 1

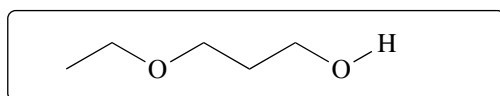
(30 points)

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.

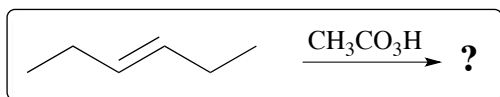
Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

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



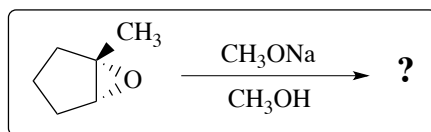
- A) 1,2-diethoxyethane B) 4-propoxy-1-propanol
C) 3-ethoxy-1-propanol D) dipropyl ether

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



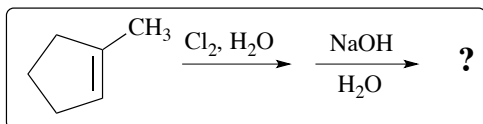
- A) *cis*-2,3-diethyloxirane B) *trans*-2,3-diethyloxirane
C) *trans*-3,4-diethyloxirane D) *cis*-3,4-diethyloxirane

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



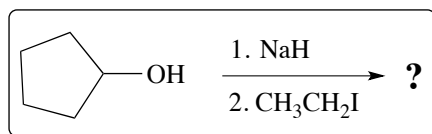
- A) B) C) D)

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



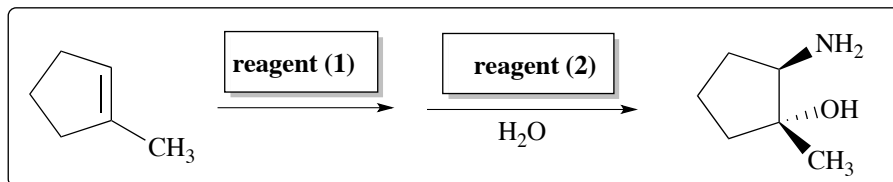
- A) *cis*-2-chloro-1-methylcyclohexanol B) *trans*-2-chloro-1-methylcyclohexanol
C) 1-methyl-2,3-cyclopentanoxirane D) 1-methyl-1,2-epoxycyclopentane

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



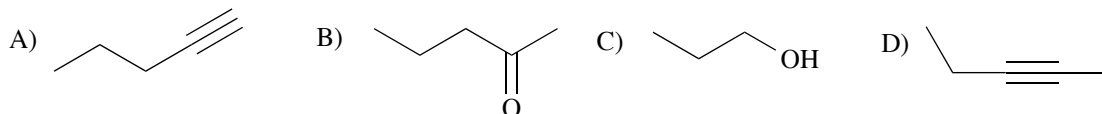
- A) ethoxycyclopentane B) *trans*-2-ethoxycyclopentanol
C) 1,2-epoxycyclopentane D) *cis*-2-ethoxycyclopentanol

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

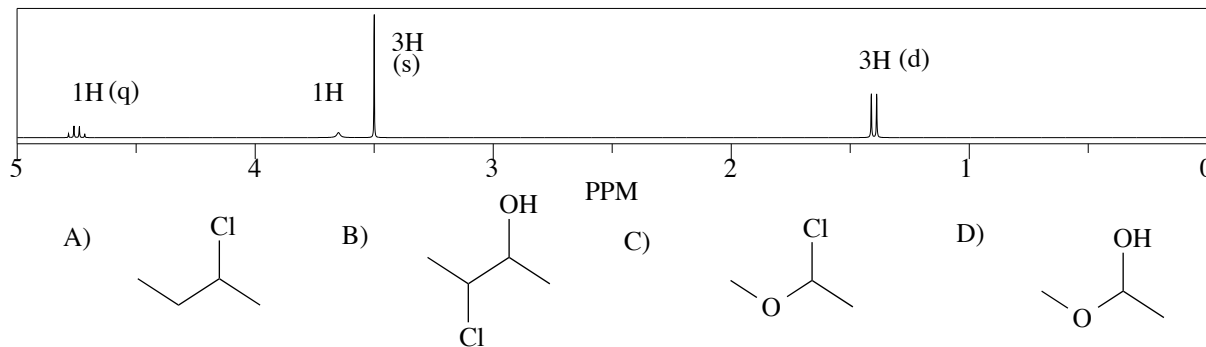


- A) (1) CH₃CO₃H, (2) NH₃
B) (1) NH₃, (2) CH₃CO₃H
C) (1) Cl₂, H₂O, (2) CH₃NH₂
D) (1) NaOH, (2) NH₃

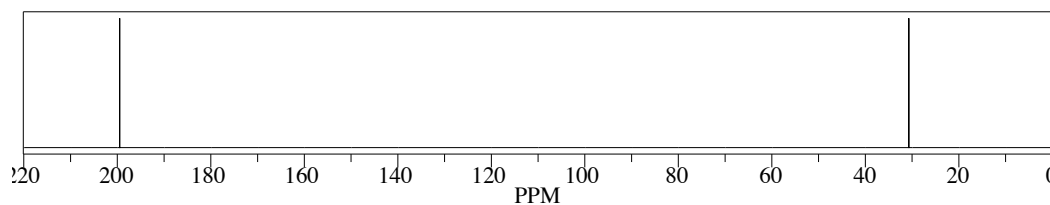
7. Which of the following compounds will have the *characteristic IR* peak at about 2200 cm⁻¹ and four signals in the ¹H NMR spectrum?



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; N 14; H 1) **and** the following ¹³C NMR spectrum:



- A) B)
C) HCO₂H D)

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

- A) CH₄ B) (CH₃)₄Si C) H₂C=O D) CH₃Cl