

Chemistry 2542, Fall 2016

Quiz 3

Key

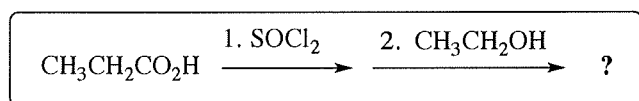
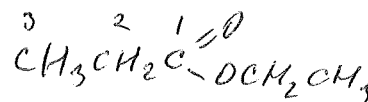
(30 points)

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 **name** of product of the reaction shown in the box?



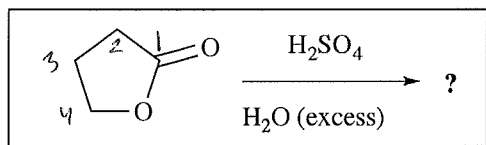
A) acetyl chloride

B) ethyl propanoate

C) propanoyl chloride

D) propyl acetate

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



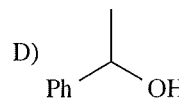
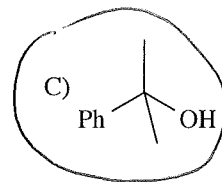
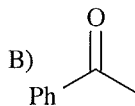
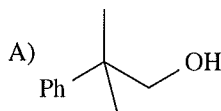
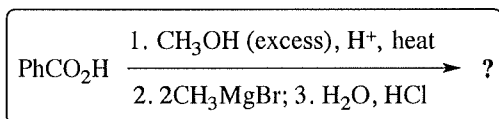
A) 1-hydroxycyclopentanone

B) 4-hydroxy-3-methylpentanoic acid

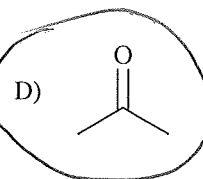
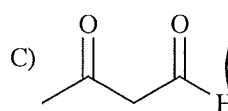
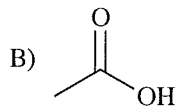
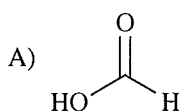
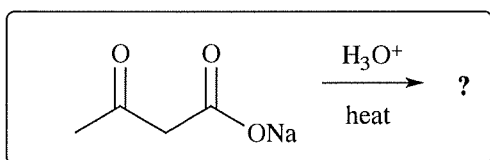
C) 4-hydroxybutanoic acid

D) 5-hydroxypentanoic acid

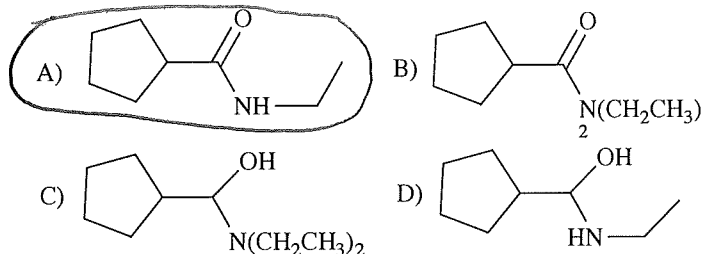
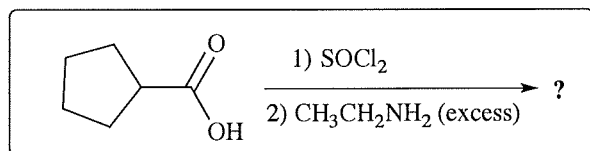
3. What is the **main product** of the reaction shown in the box?



4. What is the **product** of the following decarboxylation reaction?



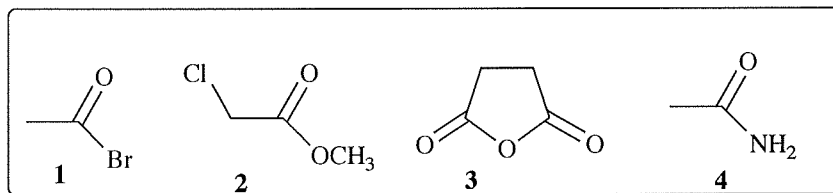
5. What is the **main product** of the sequence of reactions shown in the box?



6. What is the order of **acidity** of butanoic acid (1), fluoroacetic acid (2), and bromoacetic acid (3)?

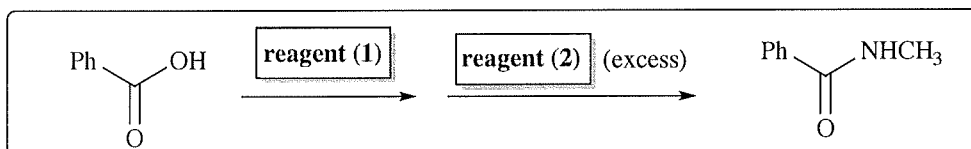
- A) 1 (strongest) > 2 > 3 (weakest) B) 2 (strongest) > 3 > 1 (weakest)
 C) 2 (strongest) > 1 > 3 (weakest) D) 3 (strongest) > 2 > 1 (weakest)

7. What is the order of reactivity of the following compounds in **nucleophilic acyl substitution reaction**?



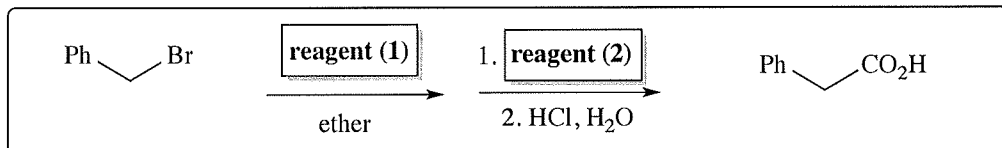
- A) most reactive 1 > 2 > 3 > 4 least reactive
 B) most reactive 3 > 1 > 2 > 4 least reactive
 C) most reactive 4 > 1 > 3 > 2 least reactive
 D) most reactive 1 > 3 > 2 > 4 least reactive

8. Which **reagents** can be used for the sequence of reactions shown in the box?



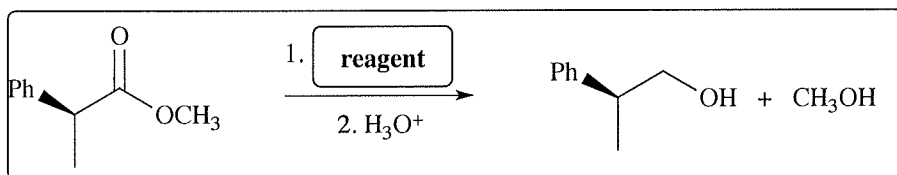
- A) (1) CH₃NH₂, (2) SOCl₂
 B) (1) SOCl₂, (2) CH₃NH₂
 C) (1) SOCl₂, (2) (CH₃)₂NH
 D) (1) (CH₃)₂NH, (2) SOCl₂

9. Which **reagents** can be used for the sequence of reactions shown in the box?



- A) (1) NaOH, (2) H₂CrO₄
 B) (1) Mg, (2) H₂CrO₄
 C) (1) Mg, (2) CO₂
 D) (1) NaOH, (2) Ag₂O

10. Which **reagents** can be used for the sequence of reactions shown in the box?



- A) LiAlH₄ B) NaBH₄
 C) NaOCH₃ D) NaH