

# Chemistry 2542, Fall 2016

## Quiz 3

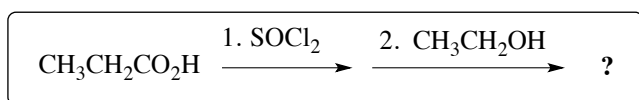
(30 points)

### 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.

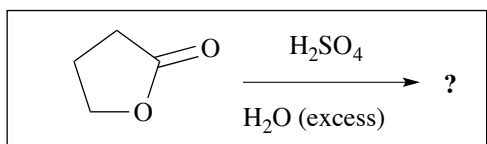
**Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).**

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



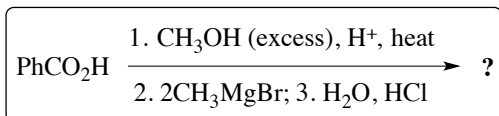
- A) acetyl chloride      B) ethyl propanoate  
C) propanoyl chloride      D) propyl acetate

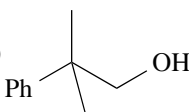
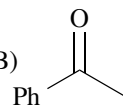
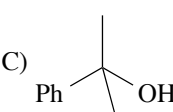
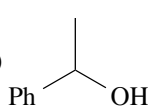
2. What is the **IUPAC name** of product of the reaction shown in the box?



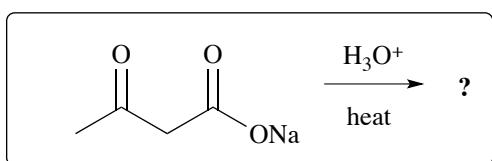
- A) 1-hydroxycyclopentanone      B) 4-hydroxy-3-methylpentanoic acid  
C) 4-hydroxybutanoic acid      D) 5-hydroxypentanoic acid

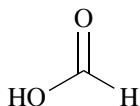
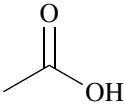
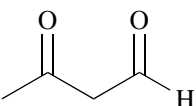
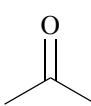
3. What is the **main product** of the reaction shown in the box?



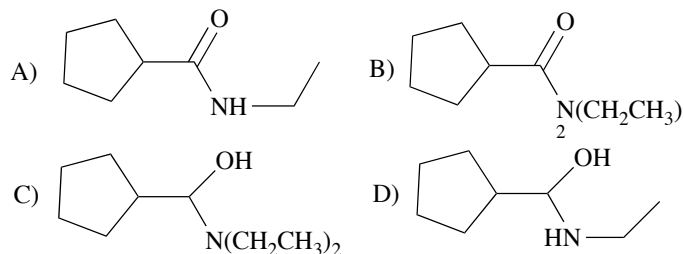
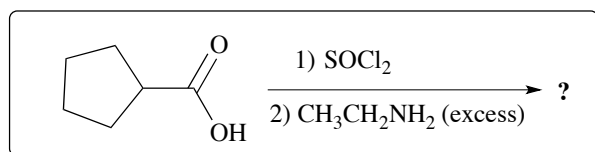
- A)       B)       C)       D) 

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



- A)       B)       C)       D) 

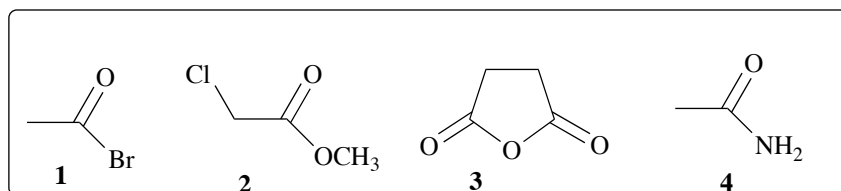
5. What is the **main product** of the sequence of reactions shown in the box?



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

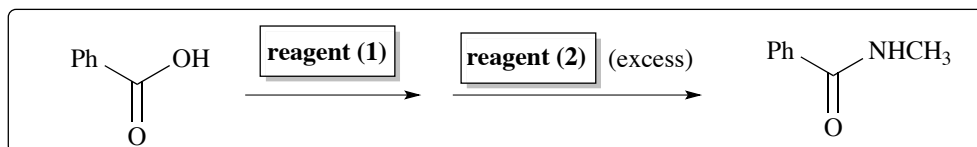
- A) **1** (strongest) > **2** > **3** (weakest)      B) **2** (strongest) > **3** > **1** (weakest)  
 C) **2** (strongest) > **1** > **3** (weakest)      D) **3** (strongest) > **2** > **1** (weakest)

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



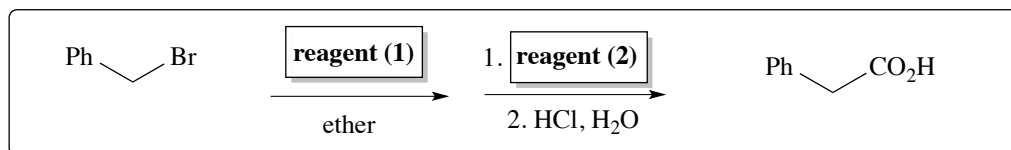
- A) most reactive **1** > **2** > **3** > **4** least reactive  
 B) most reactive **3** > **1** > **2** > **4** least reactive  
 C) most reactive **4** > **1** > **3** > **2** least reactive  
 D) most reactive **1** > **3** > **2** > **4** least reactive

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



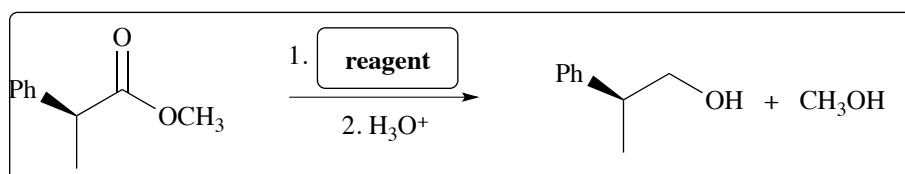
- A) (1)  $\text{CH}_3\text{NH}_2$ , (2)  $\text{SOCl}_2$   
 B) (1)  $\text{SOCl}_2$ , (2)  $\text{CH}_3\text{NH}_2$   
 C) (1)  $\text{SOCl}_2$ , (2)  $(\text{CH}_3)_2\text{NH}$   
 D) (1)  $(\text{CH}_3)_2\text{NH}$ , (2)  $\text{SOCl}_2$

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



- A) (1)  $\text{NaOH}$ , (2)  $\text{H}_2\text{CrO}_4$   
 B) (1)  $\text{Mg}$ , (2)  $\text{H}_2\text{CrO}_4$   
 C) (1)  $\text{Mg}$ , (2)  $\text{CO}_2$   
 D) (1)  $\text{NaOH}$ , (2)  $\text{Ag}_2\text{O}$

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



- A)  $\text{LiAlH}_4$     B)  $\text{NaBH}_4$   
 C)  $\text{NaOCH}_3$     D)  $\text{NaH}$