THIRD HOUR EXAM - CHEMISTRY 3331

November 19, 2009

NAME: Answers

PROBLEM 1._____

PROBLEM 2._____

PROBLEM 3._____

PROBLEM 4._____

TOTAL: _____

Circle the Time of Your Recitation

Monday 8am

Monday noon

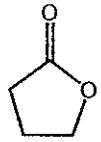
Monday 5pm

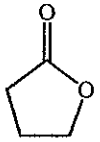
Tuesday 8 am

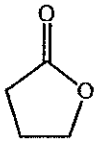
Wednesday 8 am

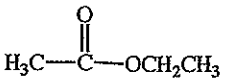
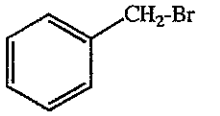
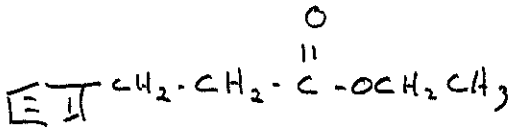
Wednesday 5pm

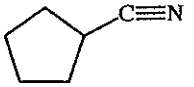
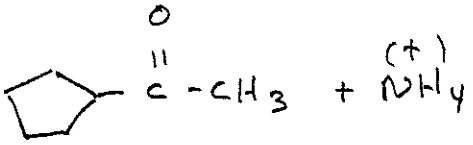
Problem 1. (40 points) Give the **final** products for the following reactions. If no reaction occurs, please state so. **Circle your answers.**

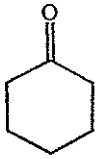
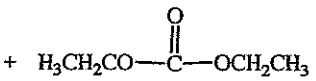
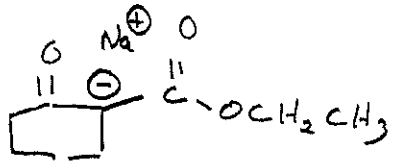
A)  1) $LiAlD_4$ / THF, 2) H_3O^+ → $HO-CH_2-CH_2-CH_2-C(D)(D)-OH$

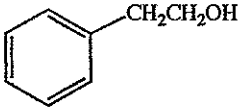
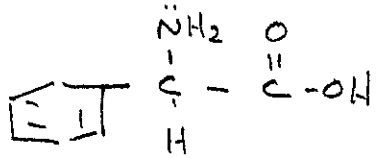
B)  1) CH_3MgBr / THF, 2) H_3O^+ → $HO-CH_2-CH_2-CH_2-C(CH_3)(CH_3)-OH$

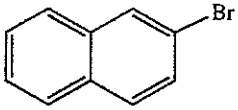
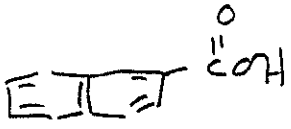
C)  NH_3 (excess), H_2O → $HO-CH_2-CH_2-CH_2-C(=O)-NH_2$

D)  1) LDA/THF, 2)  → 

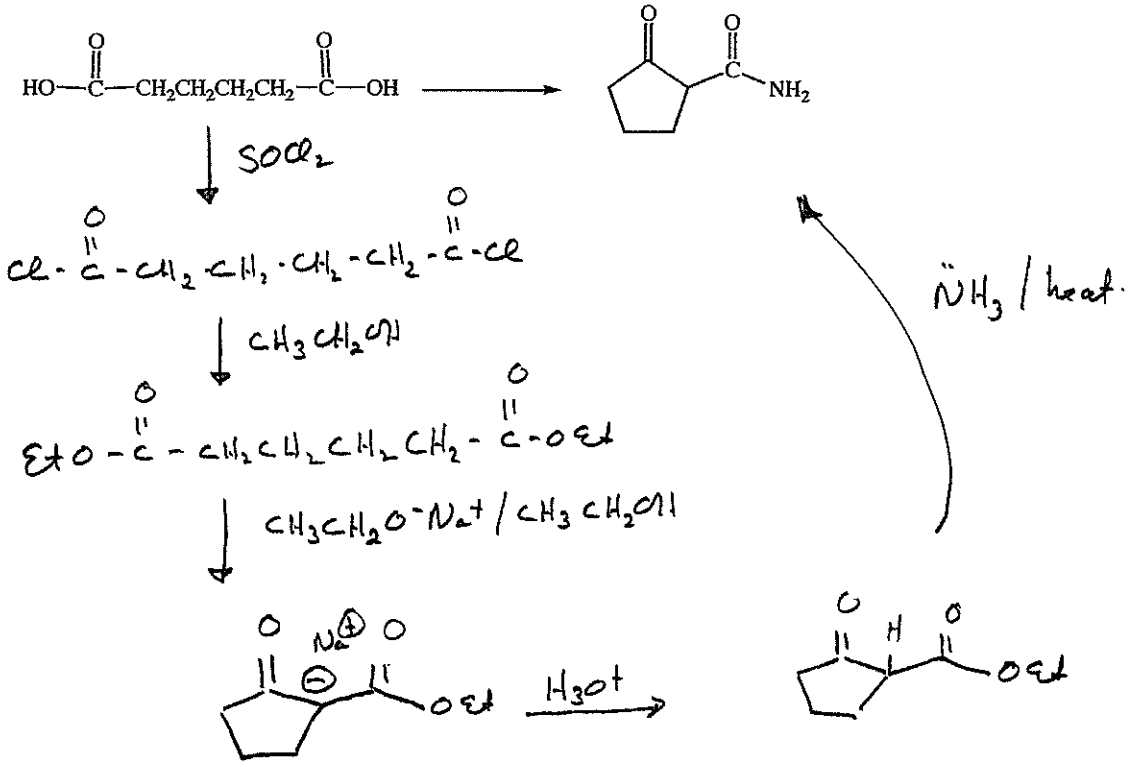
E)  1) CH_3MgBr / THF, 2) H_3O^+ → 

F)  +  $CH_3CH_2O^-Na^+$, CH_3CH_2OH → 

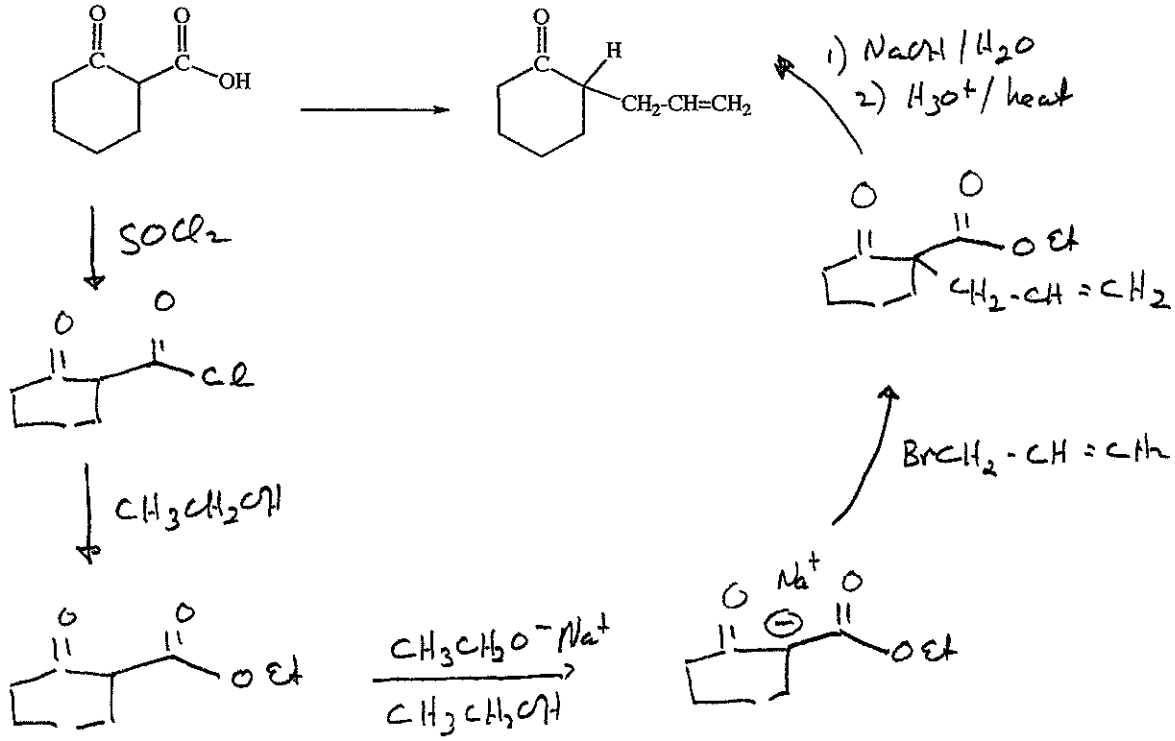
G)  1) $K_2Cr_2O_7/H_2SO_4$, 2) Br_2 / PBr_3, 3) NH_3/H_2O → 

I)  1) Mg/THF, 2) CO_2, 3) H_3O^+ → 

Problem 2. (20 points) Show how you would carry out the following transformation.

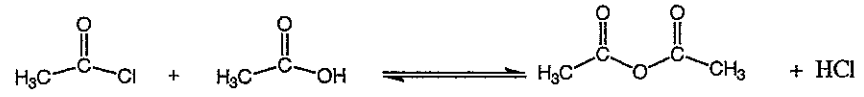


Problem 3 (20 points) Show how you would carry out the following transformation using the indicating starting material and any other organic compound.



Problem 4 (20 points) For the following reactions determine if the equilibrium lies to the left or to the right as drawn, and circle the appropriate answer.

Circle Answer

A) 

LEFT RIGHT

B) 

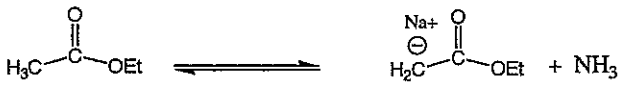
LEFT RIGHT

C) 

LEFT RIGHT

D) 

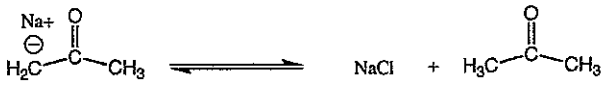
LEFT RIGHT

E) $NaNH_2$ + 

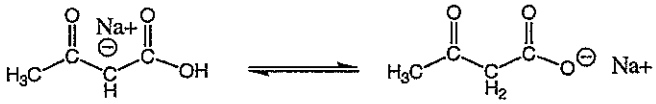
LEFT RIGHT

F) 

LEFT RIGHT

G) HCl + 

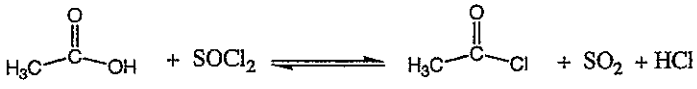
LEFT RIGHT

H) 

LEFT RIGHT

I) 

LEFT RIGHT

J) 

LEFT RIGHT