

Organic Chem II (CHEM 442) Spring 2016 Dr. Hahn 4/15 F Form B MWF-1 pm Quiz VI Exam #
Sign Name Print Name
Please show work on all questions for partial credit even on questions which do not specify. (25 pts)
1. Complete the following reactions by giving the organic products. (Circle the number of 4 of the following reactions you want graded.) (4 pts each reaction, 16 pts) (as sume work up for all R×Ns)
1) CH ₃ CH ₂ CH ₂ KMnO ₄ /H ⁺ Ch ₃ C=0 O=C Ch ₂ Ch ₃ Ch ₃ Ch ₃ Ch ₄ Ch ₃ C = O Ch ₂ Ch ₃ Ch ₃ Ch ₃ Ch ₄ Ch ₃ Ch ₄ Ch ₃ Ch ₃ Ch ₄ Ch ₄ Ch ₃ Ch ₄ Ch ₃ Ch ₄ Ch ₄ Ch ₃ Ch ₄ Ch ₄ Ch ₄ Ch ₃ Ch ₄
2) CH3 CH2-C-O-CH3 + excess HO-CH3 - CH3 CH2-C-O-CH3 (CO-CO-CH3) + CO-CH3 (CO-CO-CH3) + CO-CH3 (CO-CH3) + CO-CH3 (CO-CH3
3) CH3-Br+ Na C=N > CH3-C=N H2O CH3-C-OH for enough
4) CH3-CH2-C-O-H + SOCI2 -> CH3 CH2-C-Cl (Intermediate Or)
5) CH ₃ CH ₂ CH ₂ -Br + CH ₃ -Mg Cl - Cld ₃ Cld ₂ Cld ₃ Cld ₃ Cld ₃ Cld ₃ Cld ₃
CH2-CH2-C-O-H LIAIH4 CH3 (A) - C-14
7) CH3CH2—C-CI+ H-N-CH3 -> CH3 CH2—C-N-CH3
2. Show the following reaction mechanism. This is a nucleophilic substitution reaction mechanism under base catalysis. (I did not go over this specific mechanism but if you think "generalized nucleophilic substitution" then you
will get it) Show electron pushing arrows. (9 pts)
$CH_3-C-Cl^2+H-N-CH_3 \longrightarrow CH_3-C-N-CH_3 \longrightarrow CH_3$
(Ca) -4-12 Cb2
(ice) Chaz
(4pt) Cr43, -C-N-C43
Extra Credit: Complete the reaction for the following(2 pts)
CH_3 + excess H_2O \rightarrow 2 CH_3 - COV_1
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1. Complete the following reactions by giving the organic products. (Circle the number of 4 of the following reactions you want graded.) (4 pts each reaction, 16 pts) (assume work up for all Ryws)
CH ₃ -CH ₂ -O-H K_2 Cr ₂ O ₇ /H ⁺ , CH_3 -C-O CH_2 C U_3
2) O CH_3 C O H + excess $H O CH_2 CH_3$ \rightarrow H^+
3) CH3-CH2-Br+Na C=N > CH2 CH2 CH3-C=N H2O CH2-CH3-CH3-CH3-CH3-CH3-CH3-CH3-CH3-CH3-CH3
4) Q CH3-C-O-H + SOC12 -> CH3-C-CL
5) CH3-C-CI O CH3 CH2 Mg Br, THF CH3-C-CH2 CH3 CH3-C-CH3 CH3-C-CH3
6) CH3-C-O-H LIAIH4 CH3 - C-14
$\begin{array}{c} 7) & O \\ CI-C-CH_3 + H-N-CH_3 \\ CH_2 CH_3 \end{array}$ $\begin{array}{c} CH_2 CH_3 \\ CH_3 CH_3 \end{array}$
2. Show the following reaction mechanism. This is a nucleophilic substitution reaction mechanism under base catalysis. (I did not go over this specific mechanism but if you think "generalized nucleophilic substitution" then you
will get it) Show electron pushing arrows. (9 pts)
CH3CH2CH2CH2CH2CH2CH2CH2CH2CH2CH2CH2CH2CH2C
e ign Icel
CH2CH-CH-CH
A -
CH2 Oh Ch - C-W-Ch3
CH3 Ch Ch - E-N-CH3 (Ce) H (Ce) H (Ce) H (Ch) Ch Ch - E-N-CH3 (H)
Extra Credit: Complete the reaction for the following(2 pts)
CH ₃ —C-O—C-CH ₃ + excess CH ₃ -CH ₂ -O-H \rightarrow 2 CH ₃ — C CH ₂ CH ₃

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1. Complete the following reactions by giving the organic products. (Circle the number of 4 of the following reactions you want graded.) (4 pts each reaction, 16 pts) (0.55 when work up for all RXNs)
1) CH_3 CH_2 CH_2 CH_2 CH_3 CH_3 CH_3 CH_3 CH_4 CH_3 CH_5
H H
CH ₃ CH ₂ -C-O-H + excess H-O-CH ₃ \rightarrow CH ₃ CH ₂ - C-O CH ₃ H+
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
4) CH3-CH2-C-O-H + SOC12 -> C142 C142 - C-Cl
04
5) CH ₃ CH ₂ CH ₂ -C Br + CH ₃ -Mg Cl - CL ₂ Ch ₂ Ch ₃ Ch ₃ Ch ₄ Ch ₃ Ch ₄ Ch ₃ Ch ₄ Ch ₃ Ch ₄ Ch ₄ Ch ₄ Ch ₅ C
6) CH3-CH2-C-O-H LIAIH4, CH3 CH3 CH4
Π
 Show the following reaction mechanism. This is a nucleophilic substitution reaction mechanism under base catalysis. (I did not go over this specific mechanism but if you think "generalized nucleophilic substitution" then you
will get it) Show electron pushing arrows. (9 pts)
CH3-C-Ci+ HINCH3 -> CH3-C-C-CI+ baix COD
CH_3
CH3-C-CI:+ H-NCH3 - CH3-E-TX CB3 CH3-G-TX CB3 CH3-C-CI:+ H-NCH3 - CH3-E-TX CB3 CH3-C-TX CB
(14) Clay
$C_{AA} = C_{A} = \overline{N} + C_{AA}$
D 2043
Extra Credit: Complete the reaction for the following(2 pts)
CH_3 C CH_3 + excess H_2O \rightarrow 2 CH_2 C C
LU43 -CUH

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1. Complete the following reactions by giving the organic products. (Circle the number of 4 of the following reactions you want graded.) (4 pts each reaction, 16 pts) (assume work up for all Ryws 1) CH2 CH2 OPH K2Cr2Oz/H ⁺
CH_3 — CH_2 — O — H $K_2Cr_2O_7/H^+$
2) O CH_3 — C — O - H + excess $H \circ CH_2 \circ CH_3$ \longrightarrow H^+
3) $CH_3-CH_2-B_1+Na$ $C=N \rightarrow H_2O \longrightarrow $
4) Q CH_3 C
5) CH ₃ —C—Cl
6) Q CH ₃ —C—O—H <u>LiAlH</u> ₄
CI — C — CH_3 + H — N — CH_3 ————————————————————————————————————
2. Show the following <u>reaction mechanism</u> . This is a nucleophilic substitution reaction mechanism under base catalysis. (I did not go over this specific mechanism but if you think "generalized nucleophilic substitution" then you will get it) Show electron pushing arrows. (9 pts)
CH ₃ CH ₂ CH ₂ C -Cl + H-N-H -> CH ₃ CH ₂ CH ₂ C -Cl + H-N-H ->

Extra Credit: Complete the reaction for the following..(2 pts)

	4/15 E. Form R. MW/F-1 pm Quiz VI. Exam# (~)
Organic Chem II (CHEM 442) Spring 2016 Dr. Hann	4/15 F Form B MWF-1 pm Quiz VI Exam #
Sign Name	Print Name
Please show work on all questions for partial credit even	on questions which do not specify. (25 pts)
 Complete the following reactions by giving the reactions you want graded.) (4 pts each reaction. CH₃ CH₂ CH₂ KMnO₄/H⁺ 	organic products. (Circle the number of 4 of the following, 16 pts) (assume Workup for all RXNs)
2) CH ₃ CH ₂ -C-O-H + excess H-O-CH ₃ → H+	
3) CH ₃ -Br+Na C≡N→	$\xrightarrow{\text{H}_2\text{O}}$
4) O CH ₃ -CH ₂ -C-O-H + SOCl ₂ >	
5) CH ₃ CH ₂ CH ₂ —Br + CH ₃ –Mg Cl —	→
6) O CH3-CH2-C-O-H LiAlH4	
6) O CH ₃ -CH ₂ -C-O-H LiAlH ₄ 7) CH ₃ CH ₂ -C-Cl+ H-N-CH ₃ H	
2. Show the following reaction mechanism. This catalysis. (I did not go over this specific mechanism by will get it) Show electron pushing arrows. (9 pts)	is a nucleophilic substitution reaction mechanism under base ut if you think "generalized nucleophilic substitution" then you

Extra Credit: Complete the reaction for the following..(2 pts)
$$CH_3 - C - C - CH_3 + excess H_2O \longrightarrow$$