

CHEM 2322

Exam 3

Dr. Hale
Tu,Th 9:30–10:50

Name: _____

Sign below to acknowledge that you are aware of the penalty for violating the University's academic integrity policy.

Signature: _____

Score: Page 2: ____ (20)

Page 3: ____ (30)

Page 4: ____ (20)

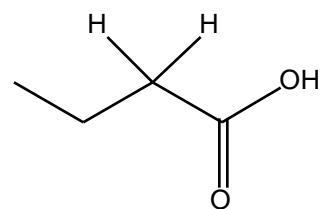
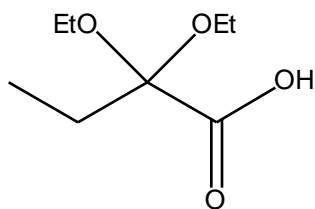
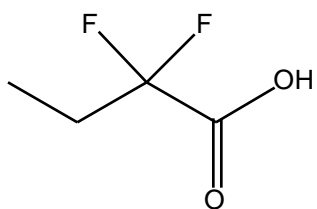
Page 5: ____ (10)

Page 6: ____ (10)

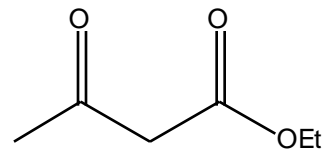
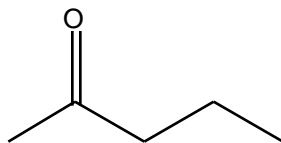
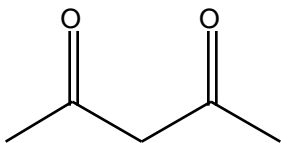
Page 7: ____ (10)

TOTAL: _____

1) Which of the following compounds has the most acidic proton? (Circle it.) **5 Pts**

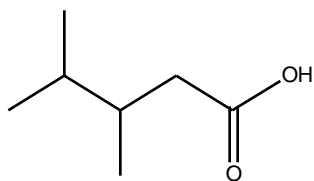


2) Which of the following compounds has the most acidic proton? (Circle it.) **5 Pts**

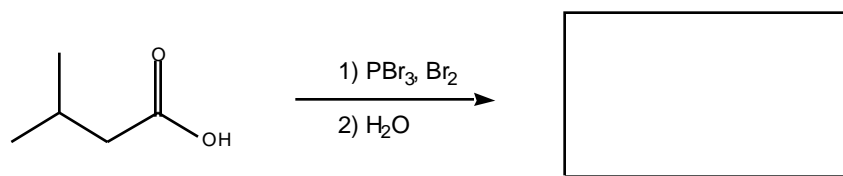
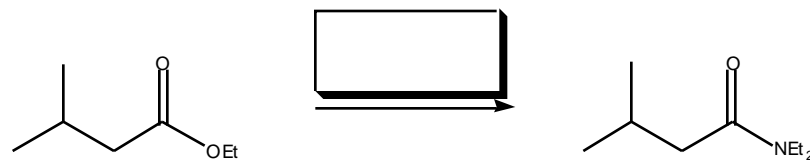
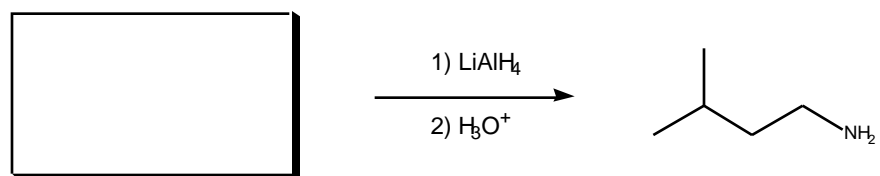
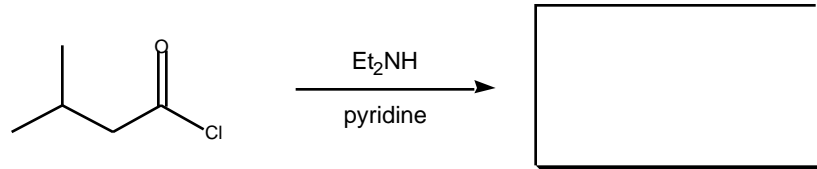
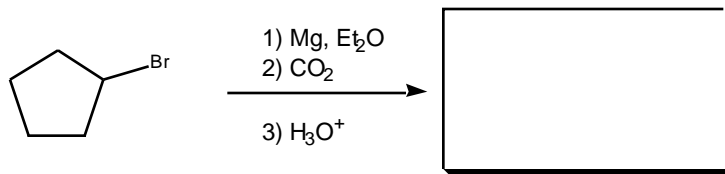
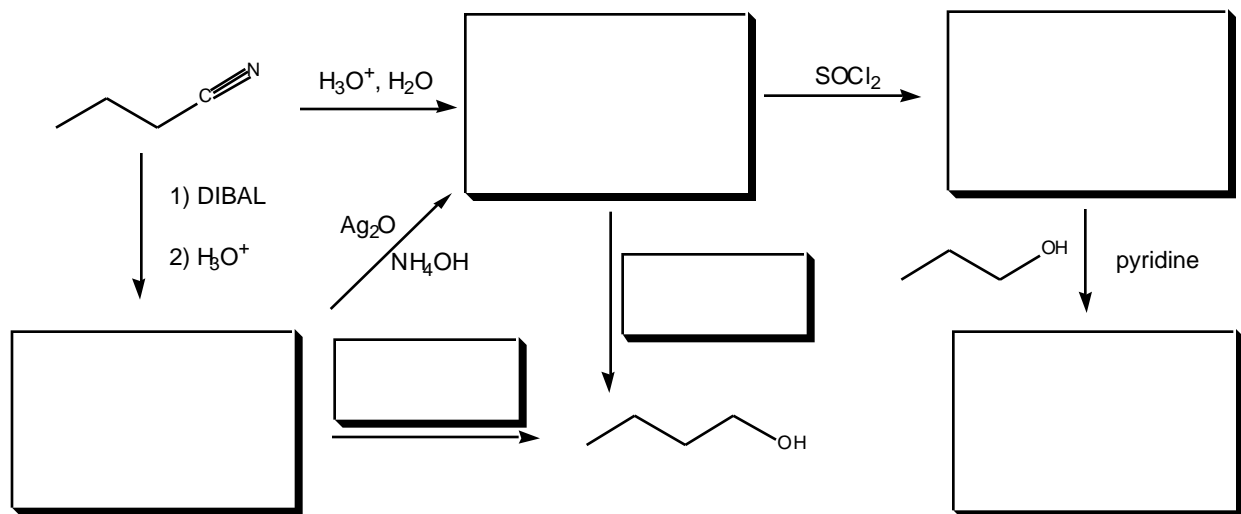


3) Why are hydrogens alpha to carbonyl groups acidic? Use the structure you chose for question 2 to explain your answer. (Use only structures please, no words.) **5 Pts**

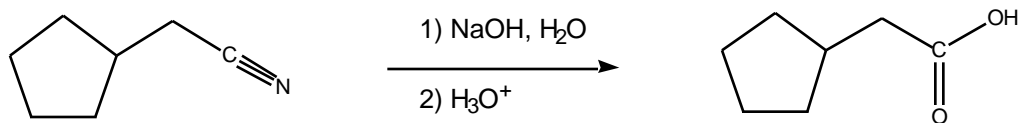
4) Name the following molecule. **5 Pts**



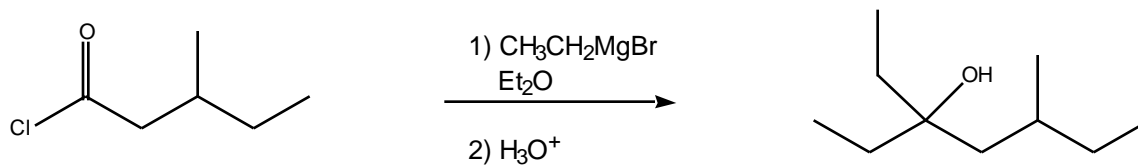
5) Complete the following reactions by filling in the missing starting material, product, or reagents. **30 Pts**



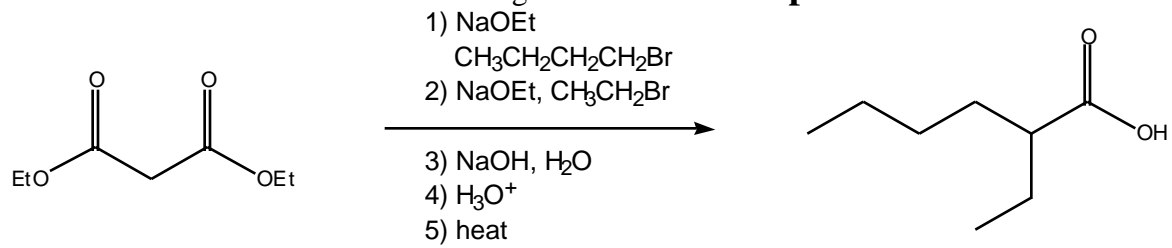
6) Show the mechanism for the following transformation. **10 Pts**



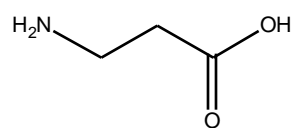
7) Show the mechanism for the following transformation. **10 pts**



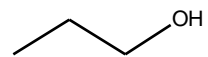
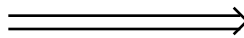
8) Show the mechanism for the following transformation. **10 pts**



- 9) Devise a synthesis for the following molecule starting with the indicated compound, any alcohol of four carbons or less as additional sources of carbon, and any reagents you would like. **10 pts**



(Target)



(Starting Material)

- 10)** Devise a synthesis for the following molecule starting with the indicated compound. You may use any alcohols of 4 carbons or less for additional sources of carbon atoms and any reagents you would like. **10 Pts**

