

Final Exam **F**

Name (PRINT) _____
Last, First

Chemistry 3332

Signature _____

April 30, 2003

SS# _____

Please circle the name of your professor and class time where appropriate.

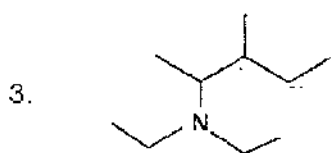
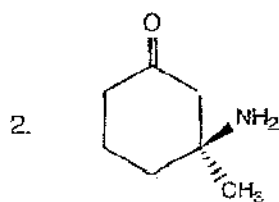
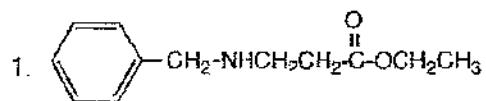
Page #	Score	
1. 12 pts.		
2. 24 pts.		
3. 16 pts.		
4. 17 pts.		
5. 17 pts.		
6. 10 pts.		

TOTAL _____

Note: Present your student ID when you return the exam booklet

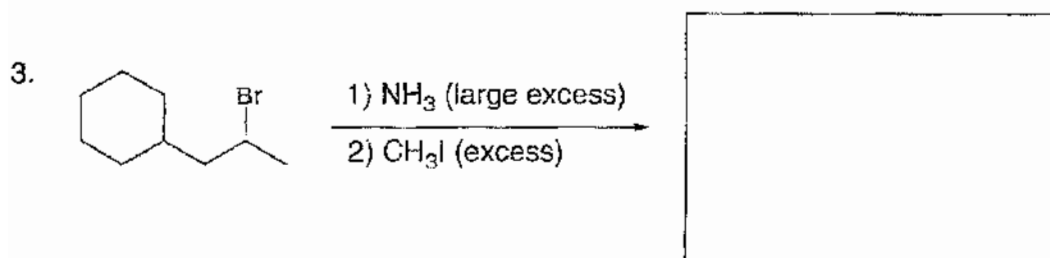
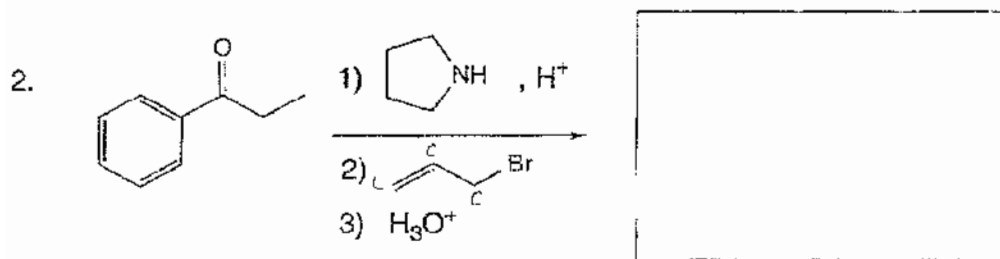
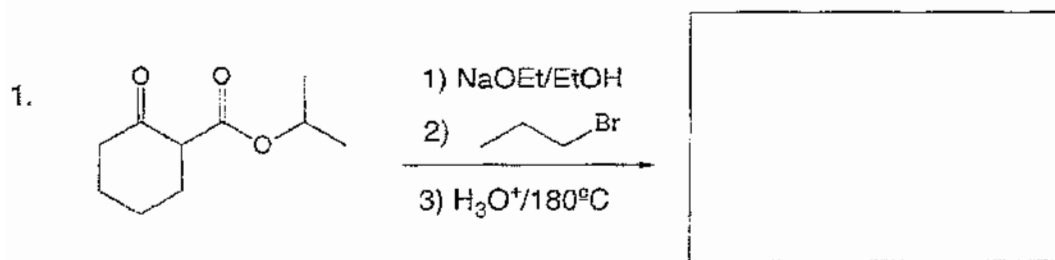
A. Nomenclature: (4 points each, total = 12 points)

Please provide an acceptable name for each of the following compounds.

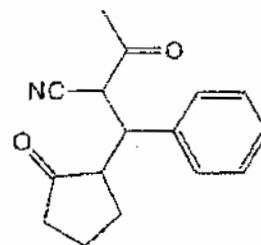
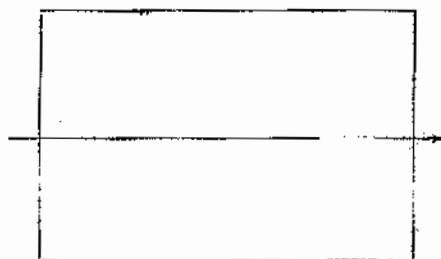
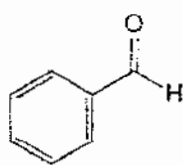


B. Reactions: (40 points, 8 pts. each)

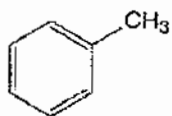
Please provide the reagents, or major organic product(s) in the answer boxes. **Partial credit** is awarded only when intermediate products are shown below the reaction.



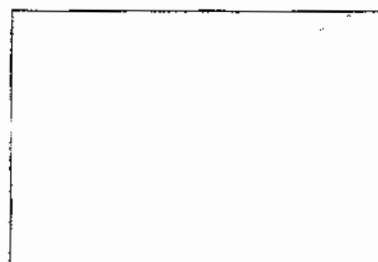
4.



5.

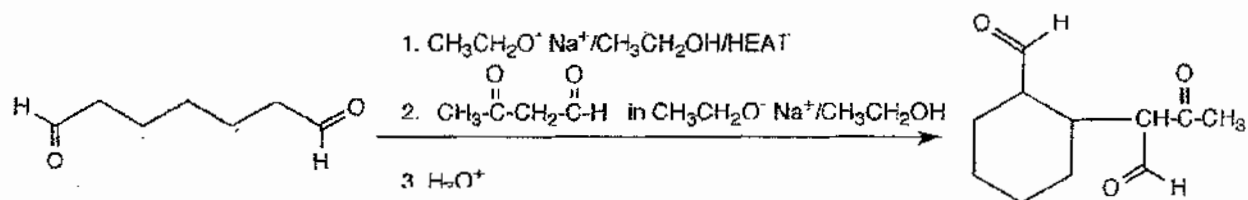


- 1) $\text{HNO}_3, \text{H}_2\text{SO}_4$
- 2) Fe, HCl
- 3) NaOH
- 4) $\text{NaNO}_2, \text{HCl}$
- 5) CuCN
- 6) LiAlH_4
- 7) H_2O



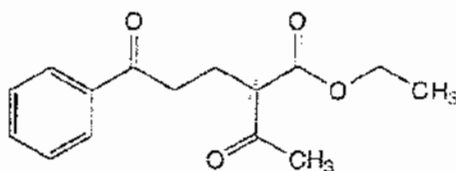
C. Mechanism: 17 points

Provide a reasonable mechanism for the reaction below. Use curved arrows to indicate "electron flow." Show all intermediates and formal charges. If there is more than one resonance contributor, you must show the "best" (i.e., lowest energy) structure.



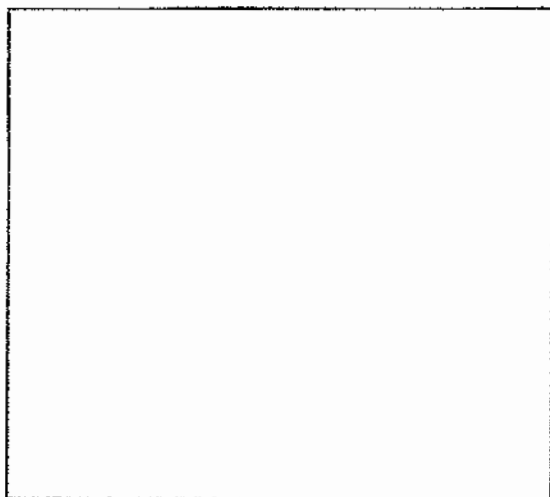
D. Synthesis (17 points)

Synthesize the compound below using any of the following reagents: alkanes, alkenes, alkynes or alcohols of two carbons or less, benzene, any oxidizing or reducing agents, and any inorganic reagents.



E. Spectroscopy: 10 Points

A compound with the formula $C_9H_{13}N$ exhibits the IR, 1H NMR, and proton-decoupled ^{13}C NMR shown on the following page. Please identify this compound and draw the structure in the box provided below.



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