

Time: 2½ hrs

Chemistry 212
Final Examination

Feb. 2, 2000
A. Salameh

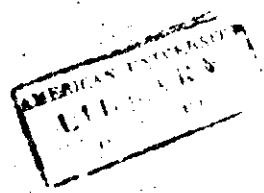
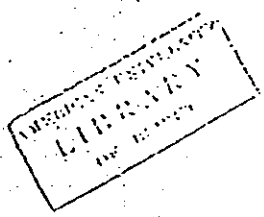
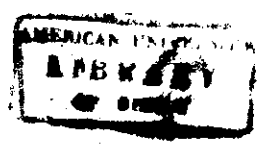


Family Name: _____

First Name: _____

Student Number: _____ Section: _____

1122



- Question I _____ out of 20
- II _____ out of 40
- III _____ out of 40
- IV _____ out of 40
- V _____ out of 24
- VI _____ out of 36
- Total _____ out of 20

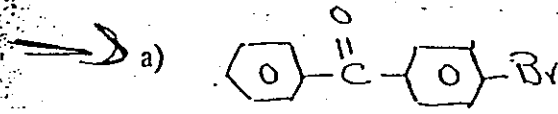


☺ Good Luck

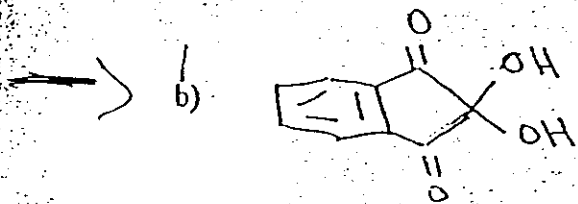
8

1 (20%) Give the structure or name of each of the following:

maltose
cellulose
galactose
sucrose

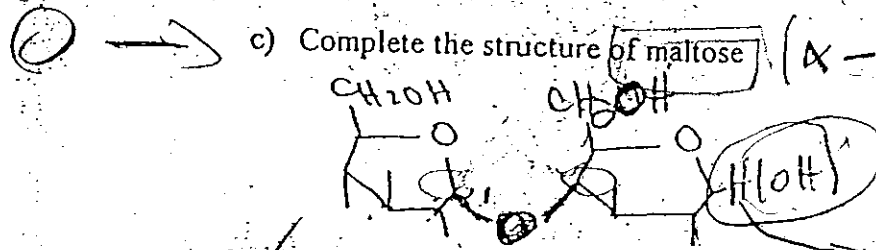


p-Bromo Benzophenone



~~Phthalic anhydride~~
NR?

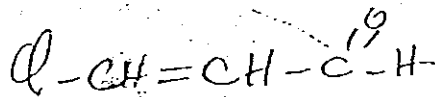
Minhydrin



2 x glucose

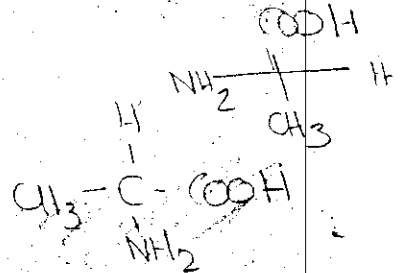
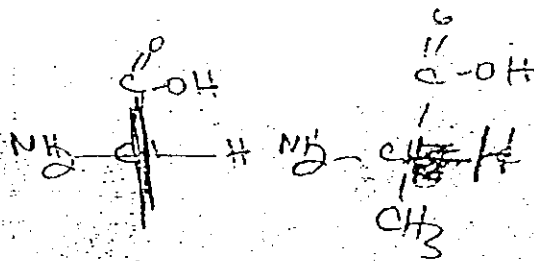
purple

d) Cinnamaldehyde

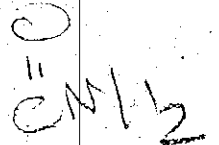
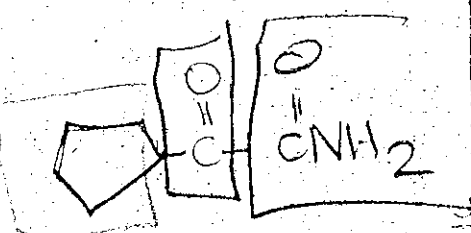
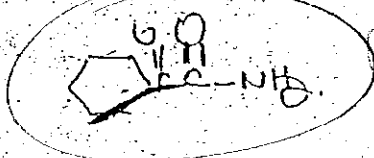


still NR?

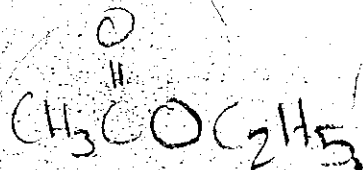
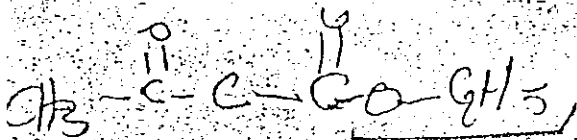
e) L-Alanine



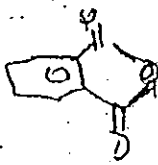
f) Cyclopentane carbonyl amide



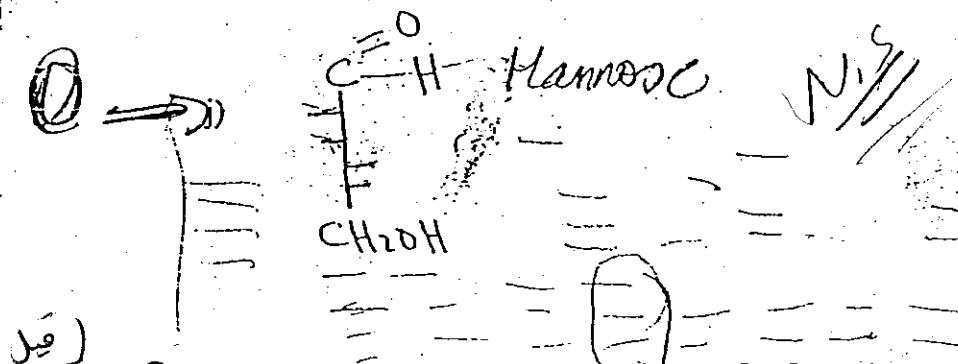
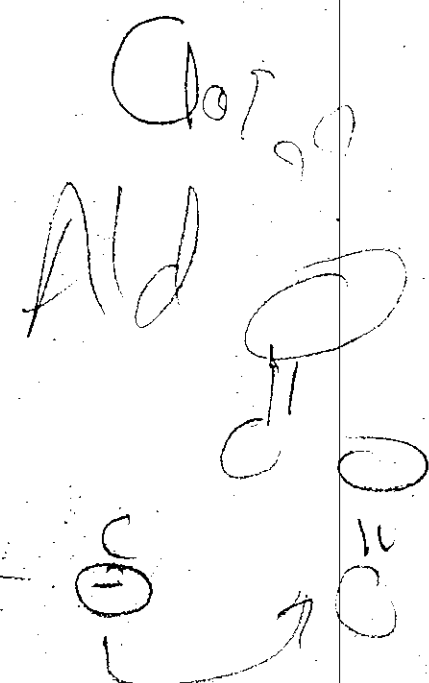
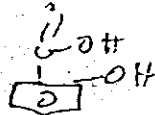
g) Ethylacetoacetate



h) Phthalic Anhydride

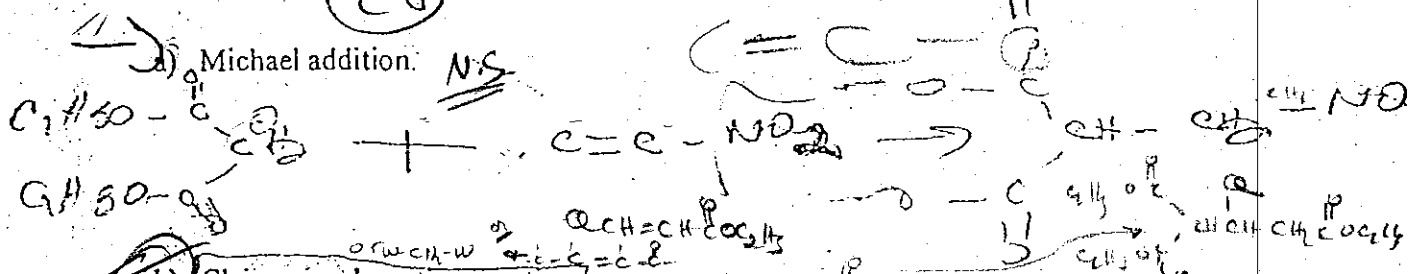


i) Salicylic acid

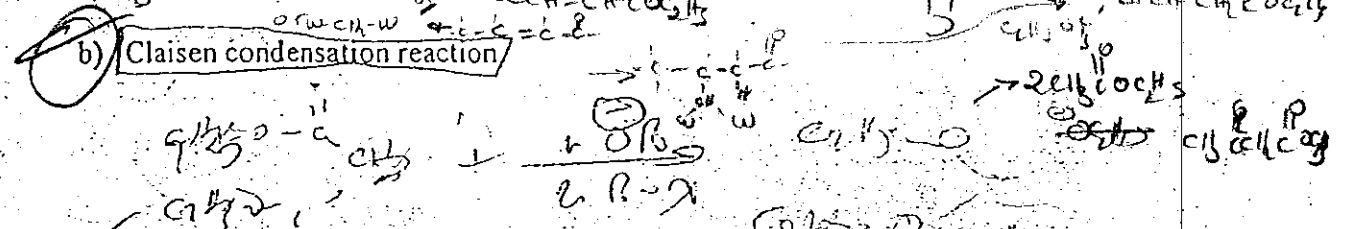


II (40%) Give a chemical reaction that represents each of the following name reactions: (28)

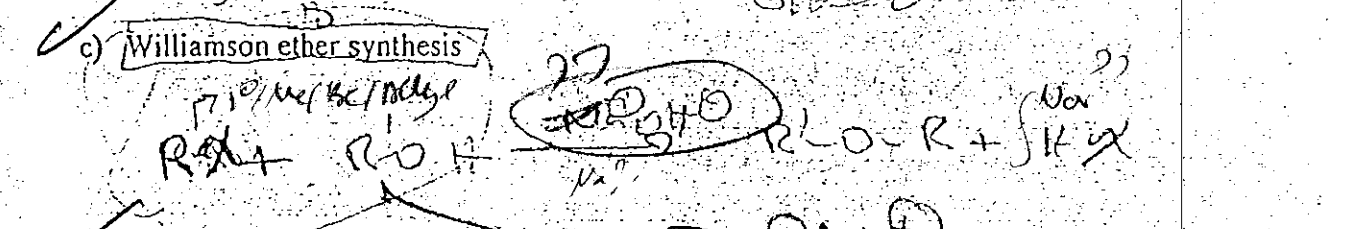
a) Michael addition



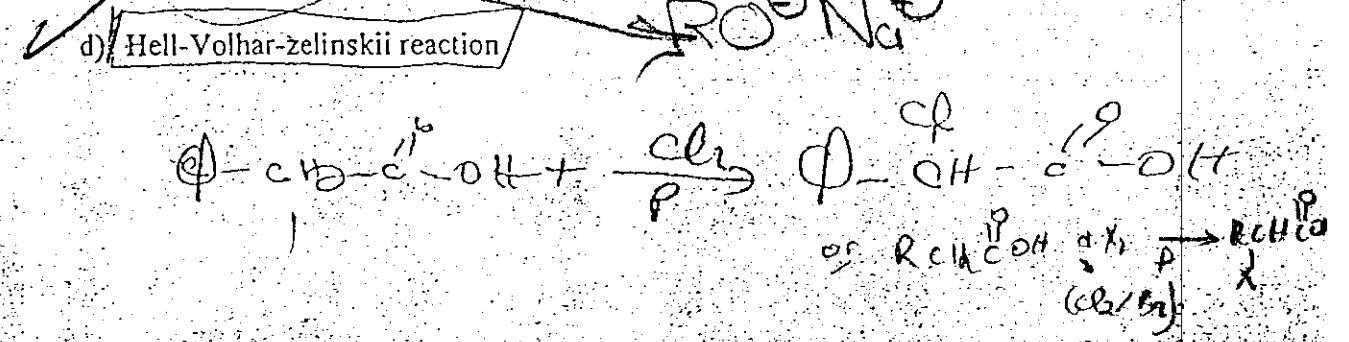
b) Claisen condensation reaction

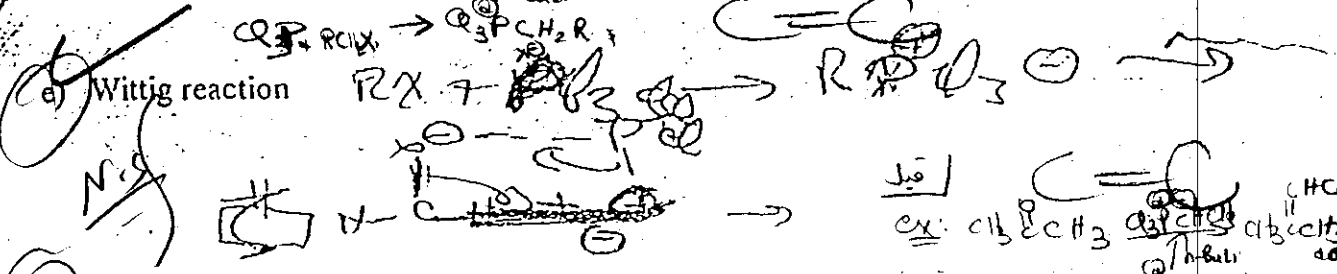
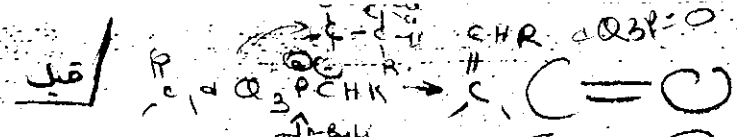


c) Williamson ether synthesis

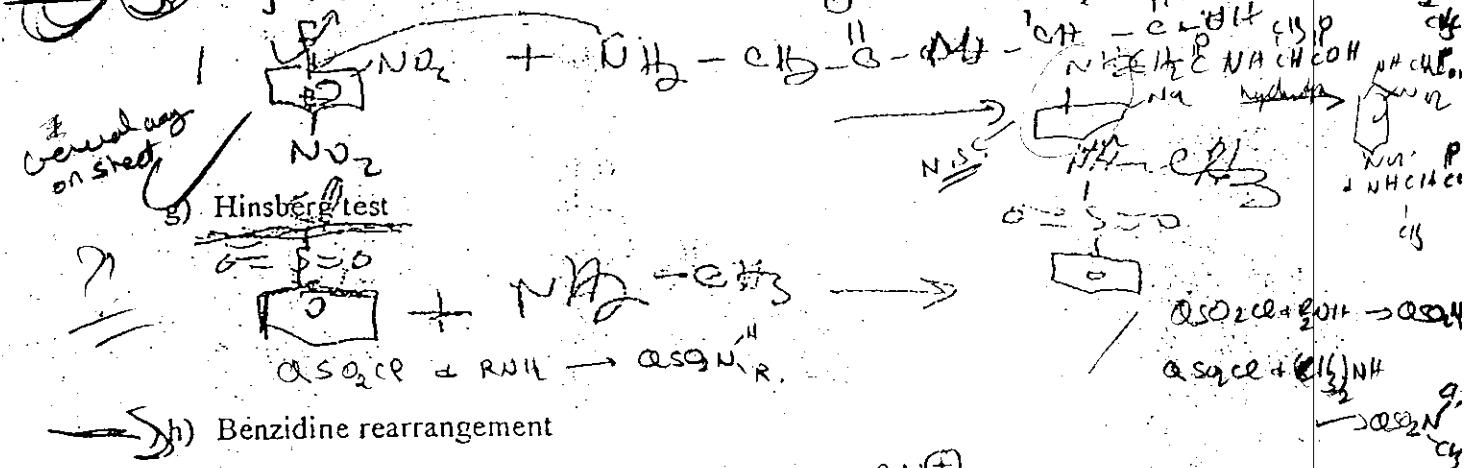


d) Hell-Volhard-Zelinskii reaction

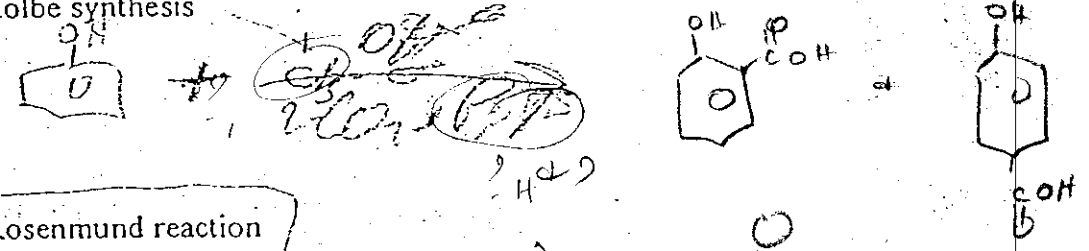




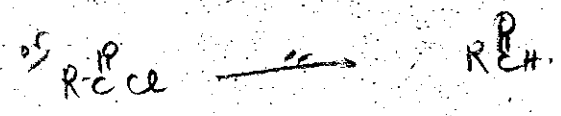
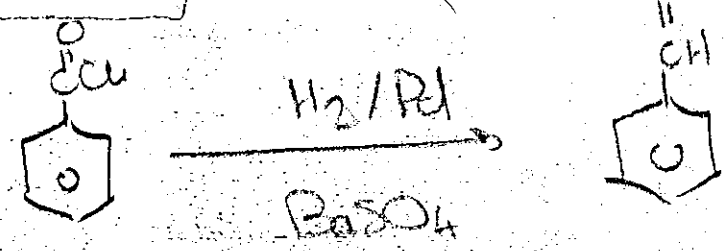
Sanger peptide analysis



i) The Kolbe synthesis

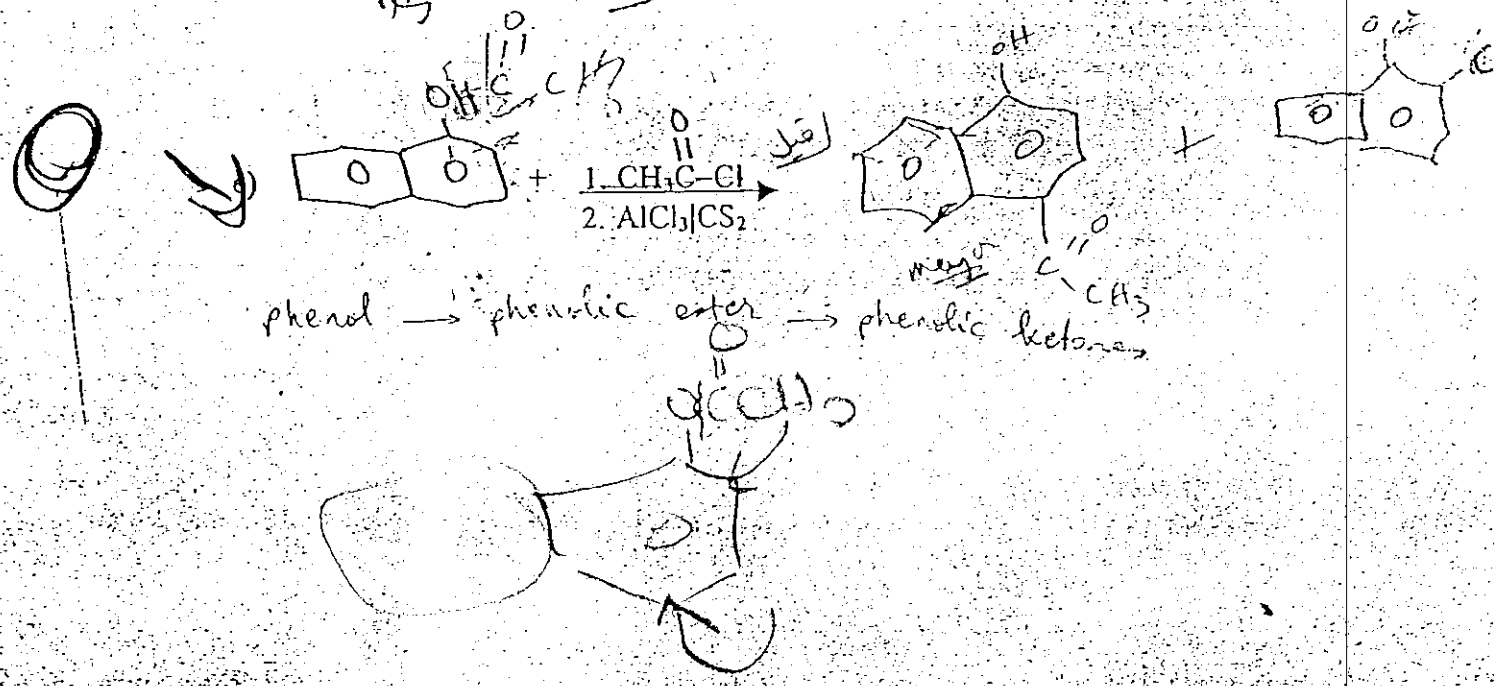
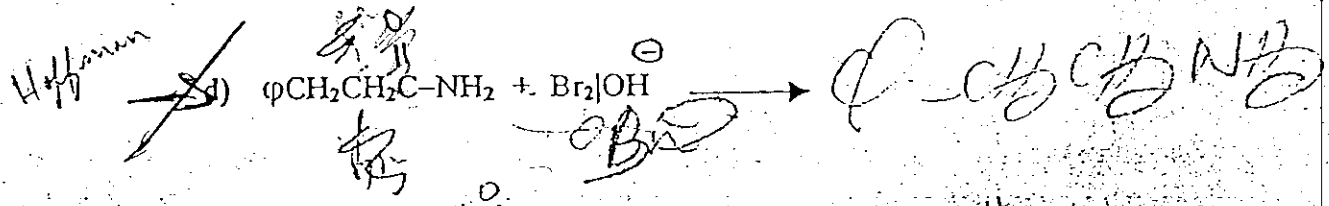
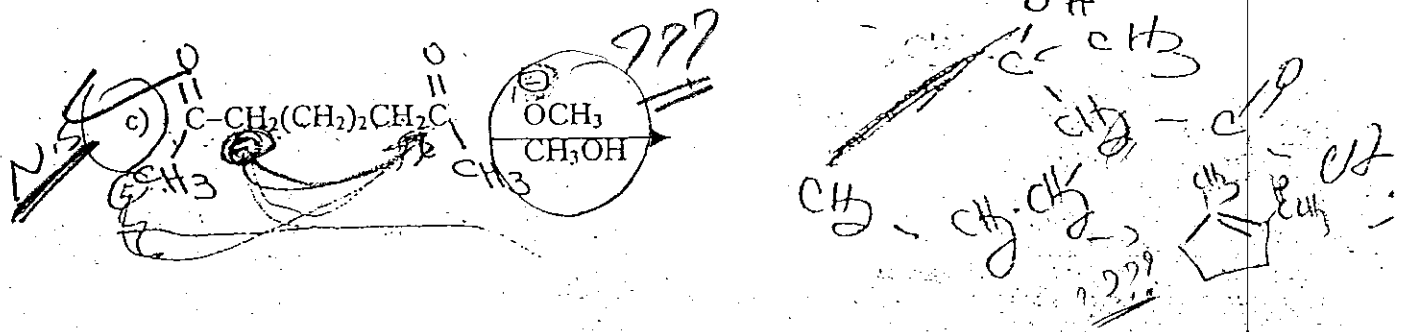
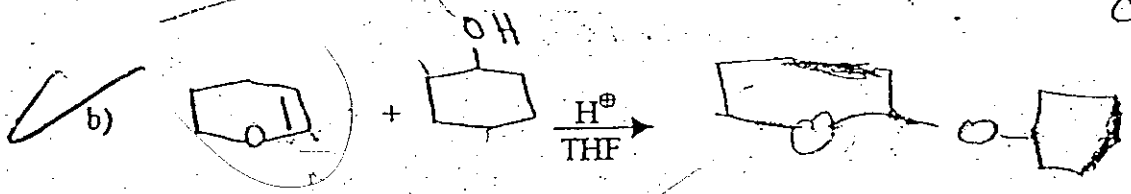
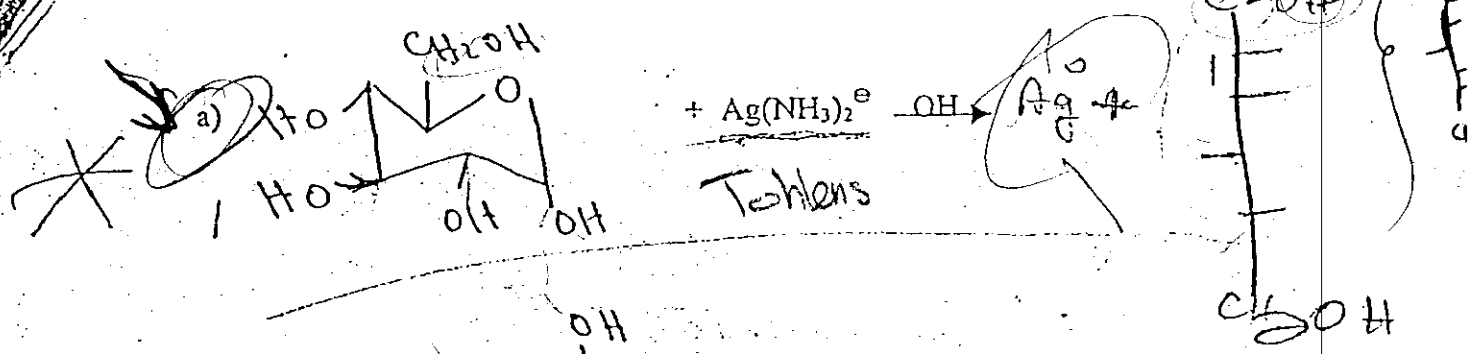


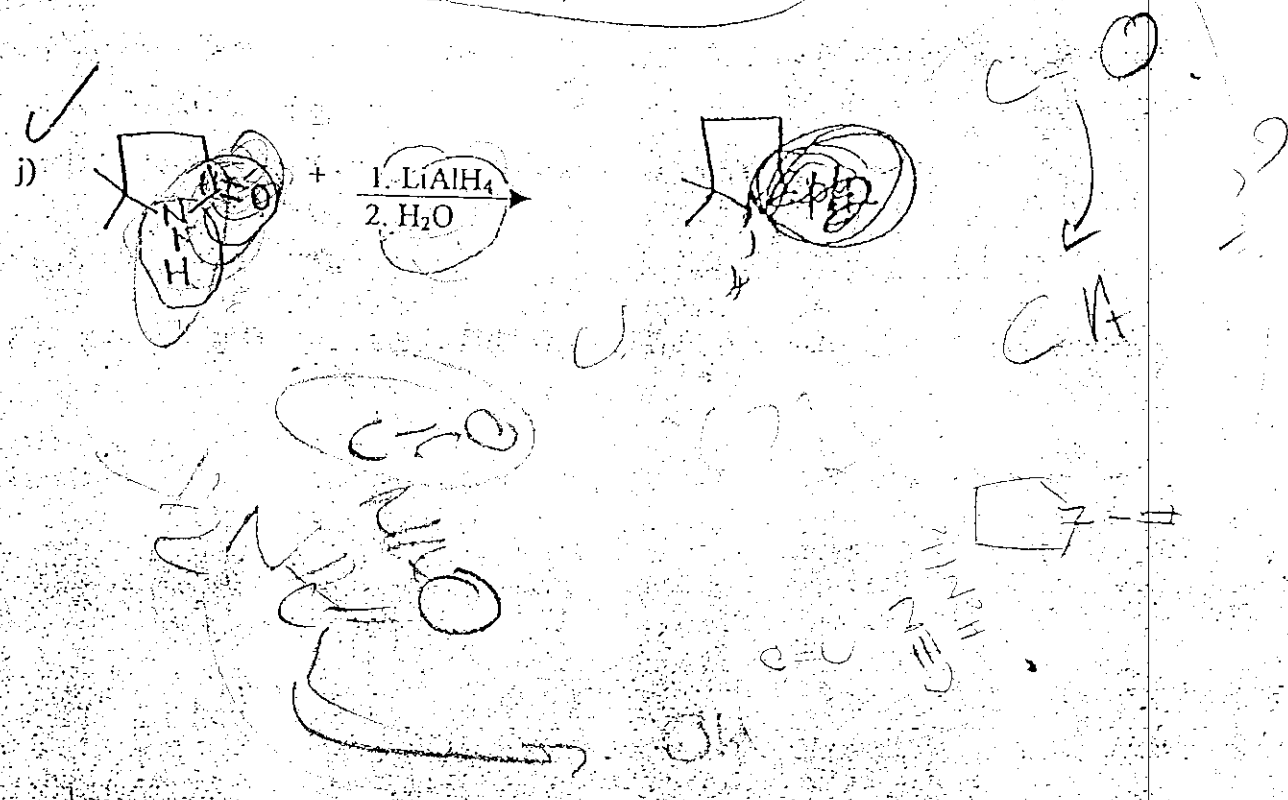
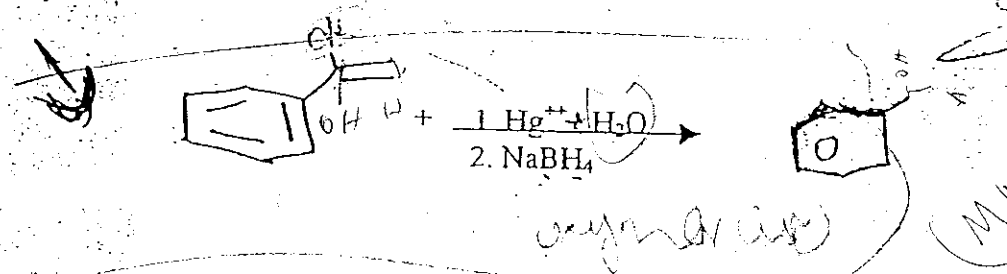
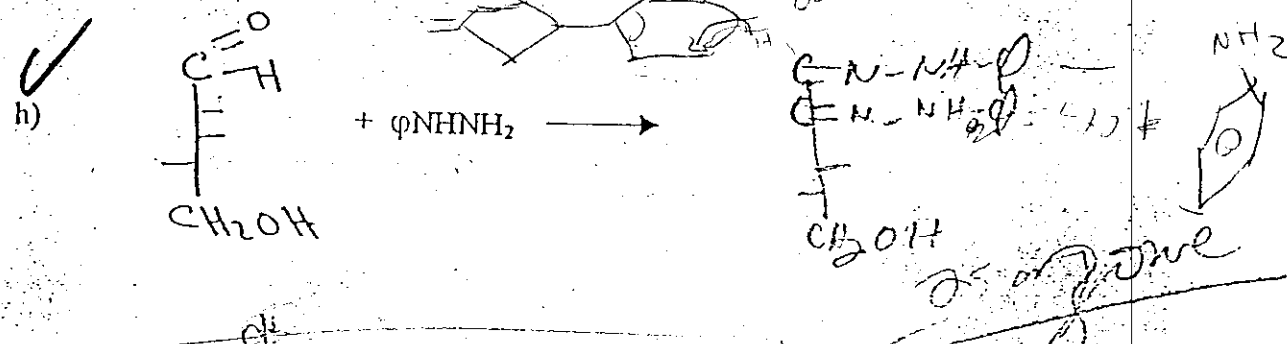
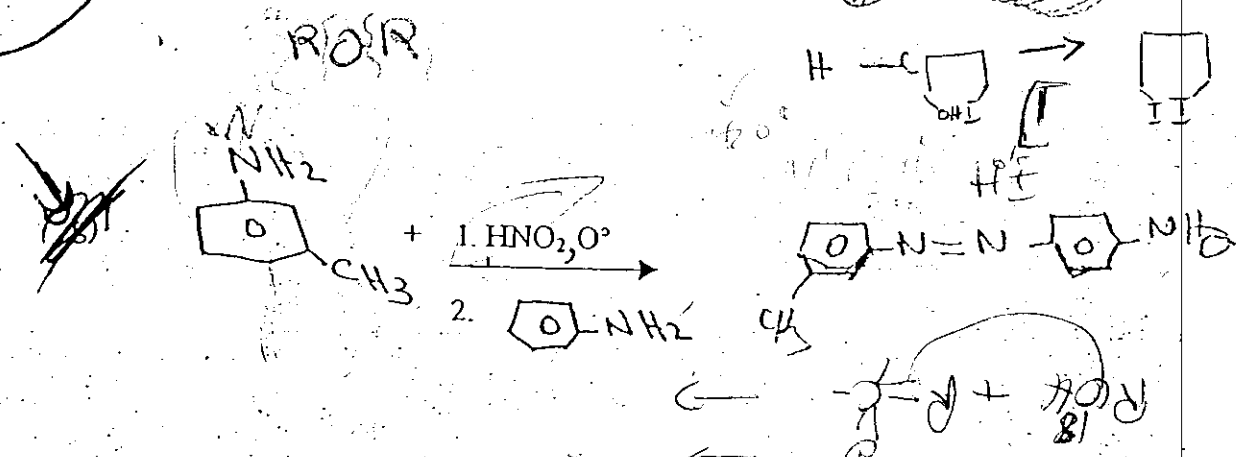
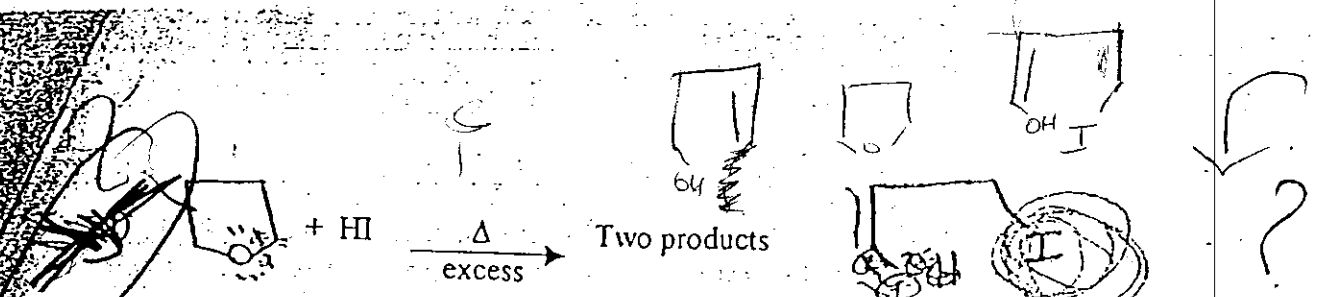
j) The Rosenmund reaction



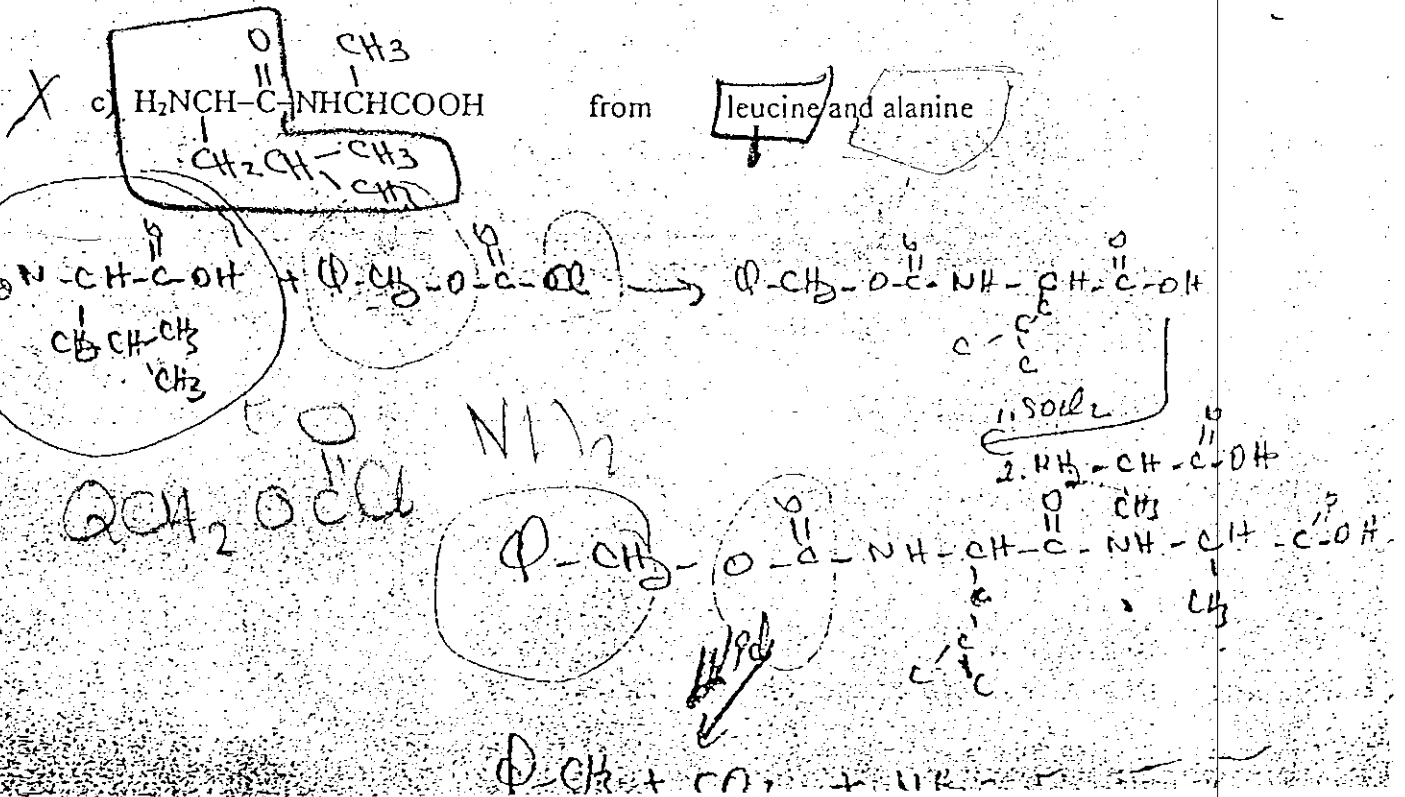
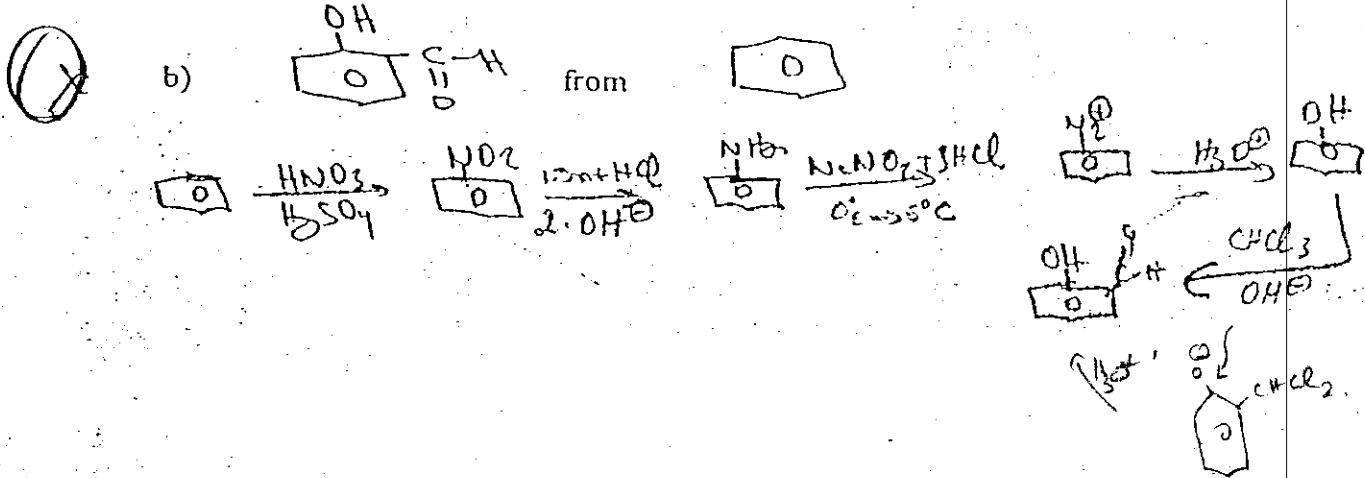
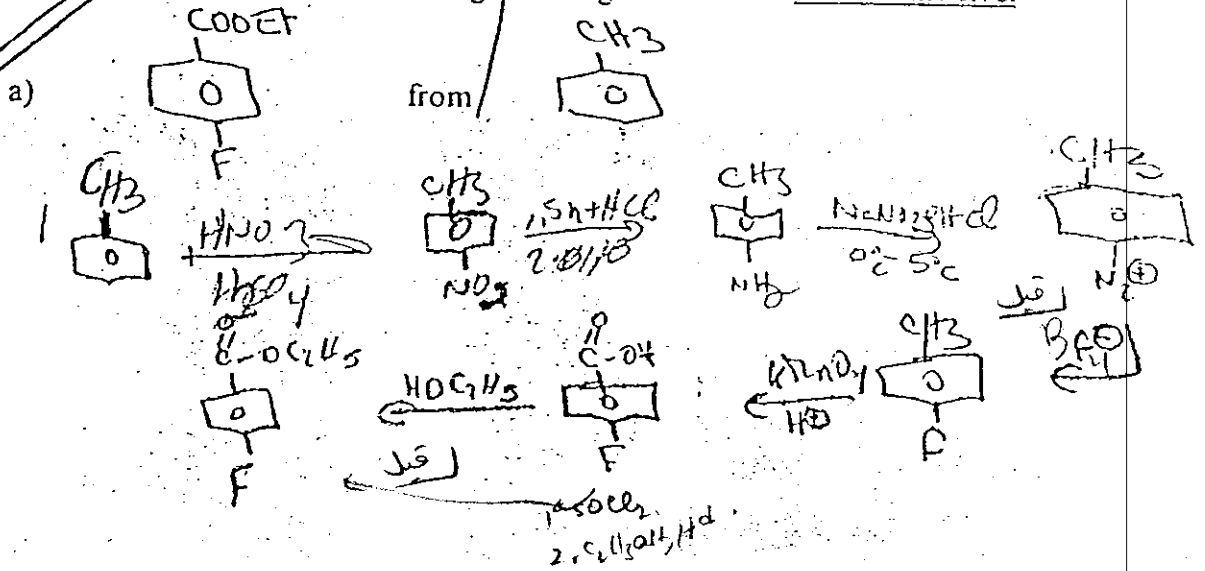
16

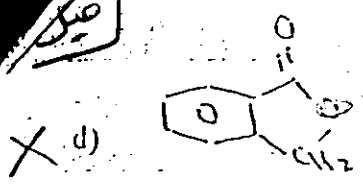
III (40%) Give the structure of the major product of each of the following reactions. If no reaction takes place write "No Reaction".



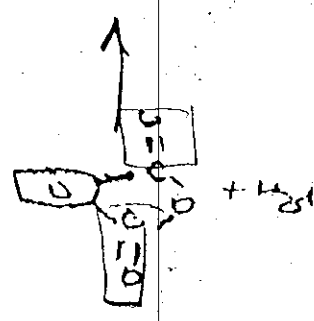
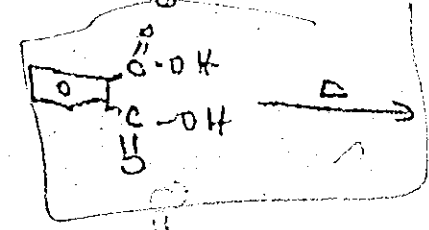
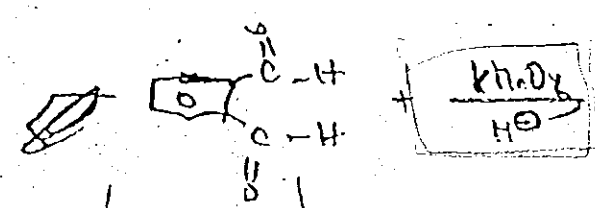
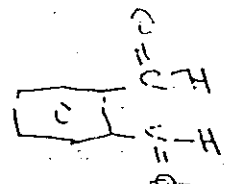


IV (40%) Synthesize each of the following from the indicated starting material. You may use any organic and/or inorganic reagents needed. Choose any five.





from

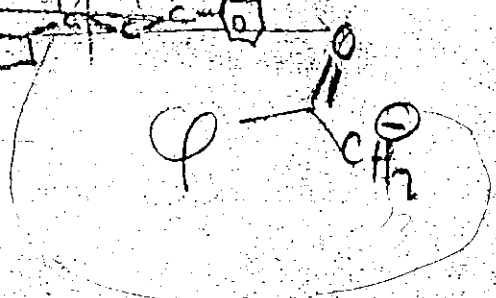
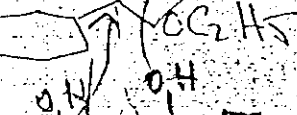
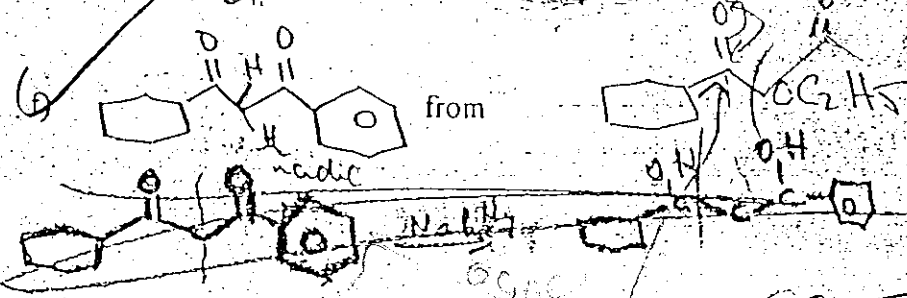
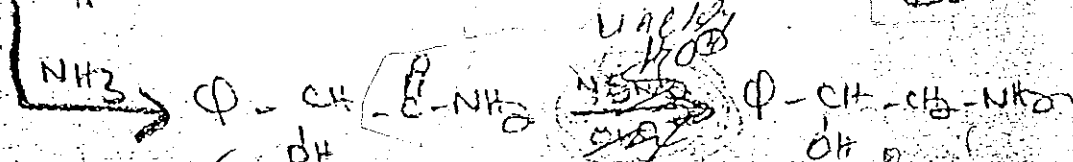
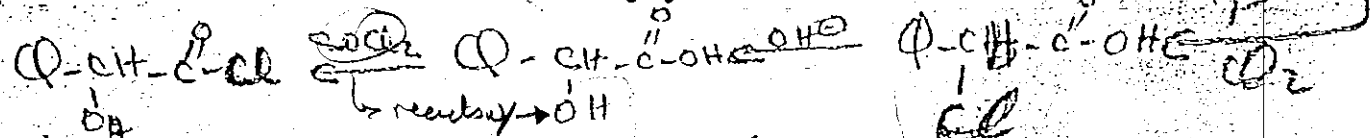
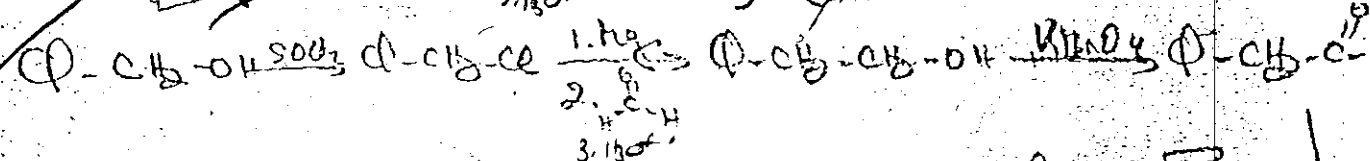
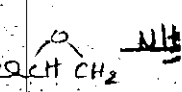
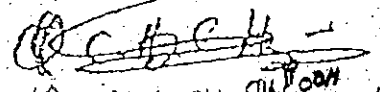
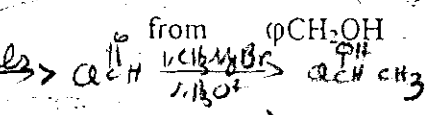
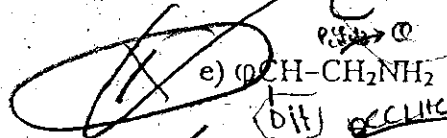
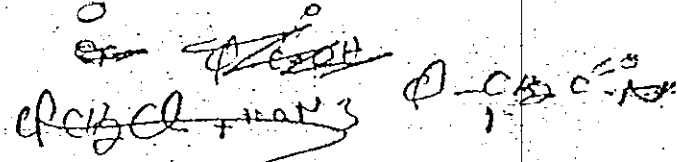
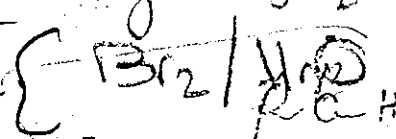


?



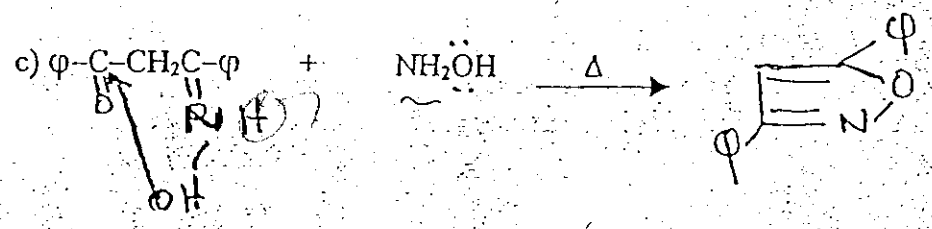
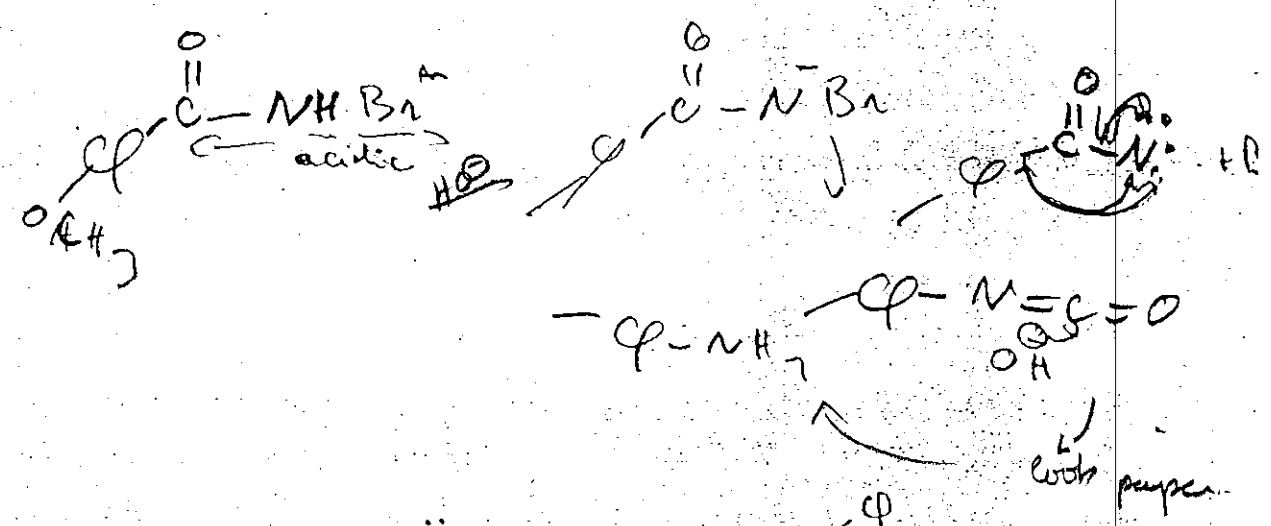
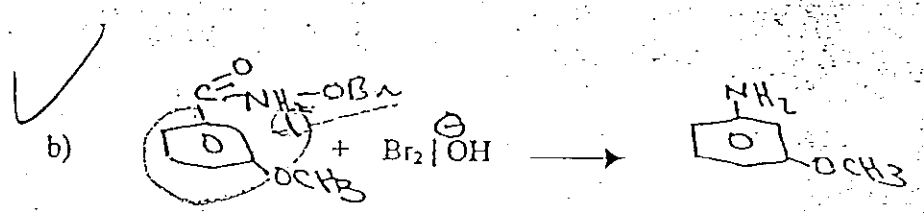
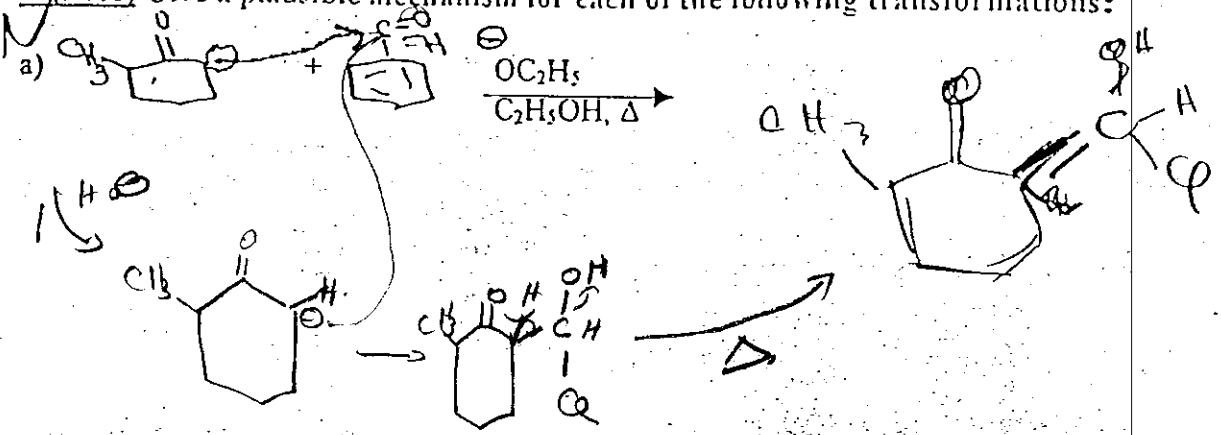
$\text{Ag}(\text{NH}_3)_2^+$

can we use it

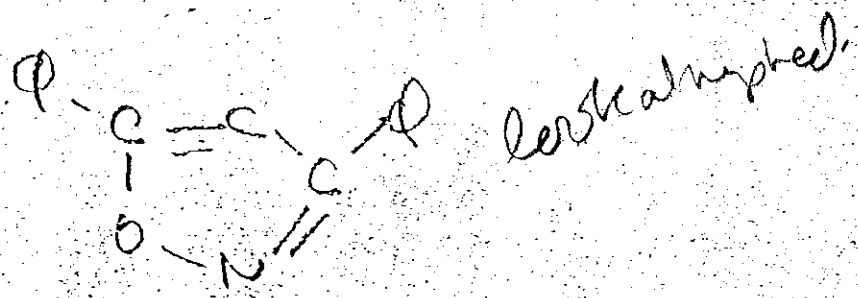


قبل

Y (24%) Give a plausible mechanism for each of the following transformations:



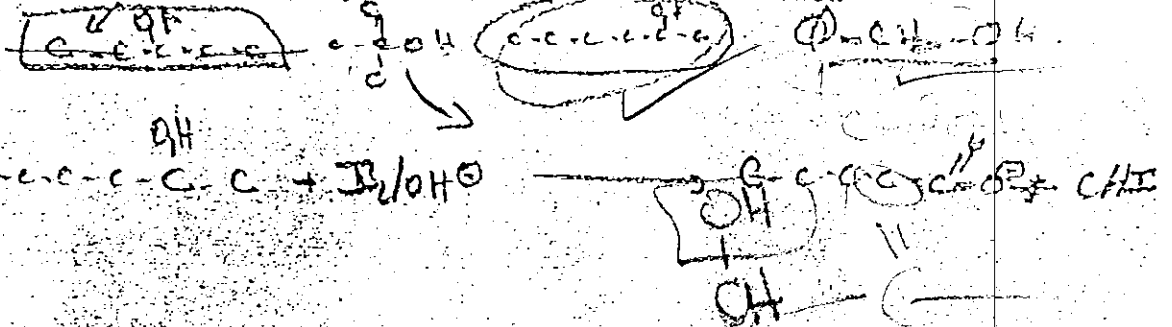
N.S



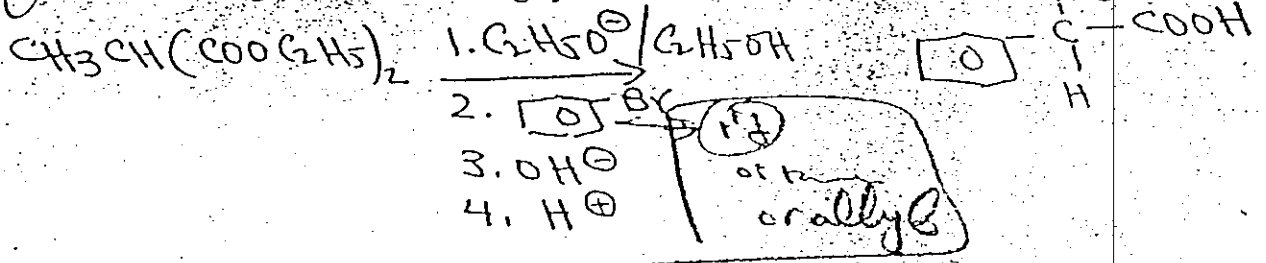
VI(36%)

30

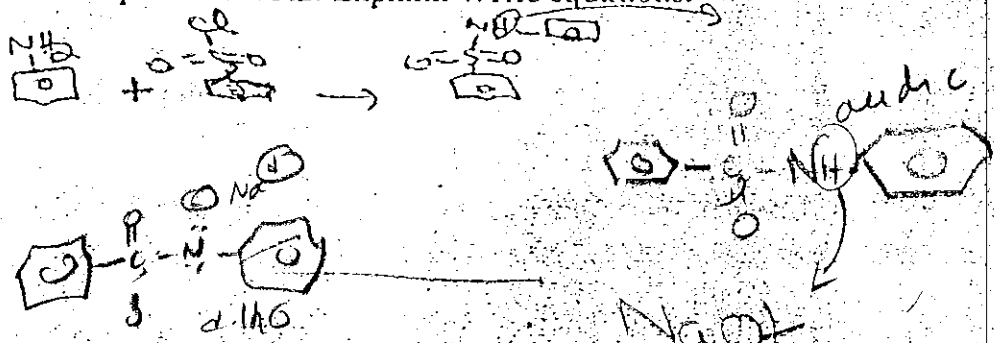
a) Which of the following compounds give(s) a positive iodoform test? Write equations: 3-pentanol, t-butylalcohol, 2-hexanol, benzylalcohol.



b) What is wrong with the following synthesis:



c) The reaction of aniline with Hinsberg reagent produces a solid substance that dissolves in aqueous NaOH. Explain. Write equations.



d) Give the structure of a compound that is not affected by oxidizing and reducing agents, nor by alkalis but undergoes aqueous acid hydrolysis to give a compound that reduces Benedict's reagent.

