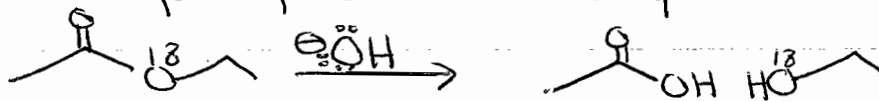


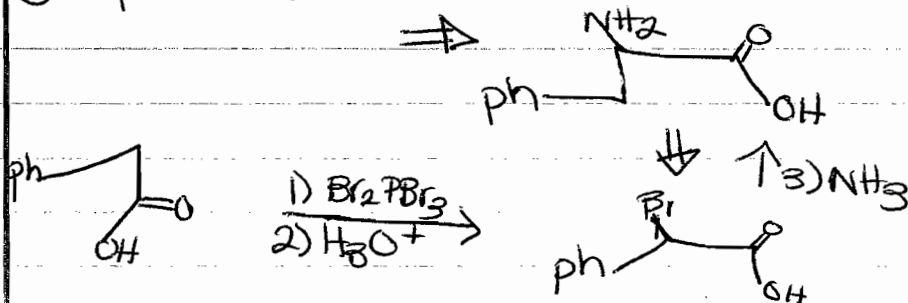
Colonna CHM 202 SIO TEST #2

1) Basic hydrolysis followed by...

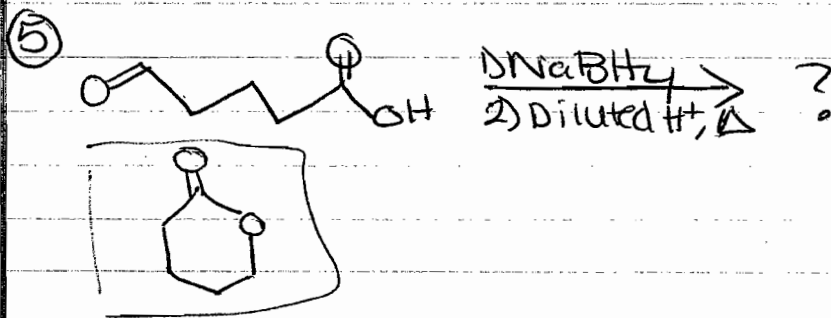
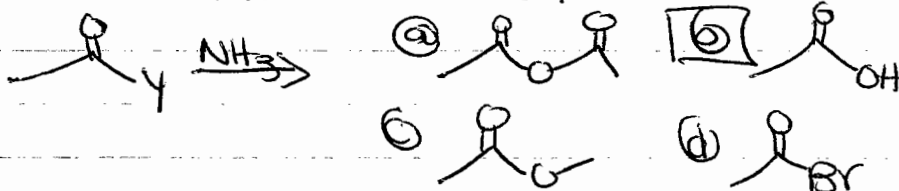


② Thrown out

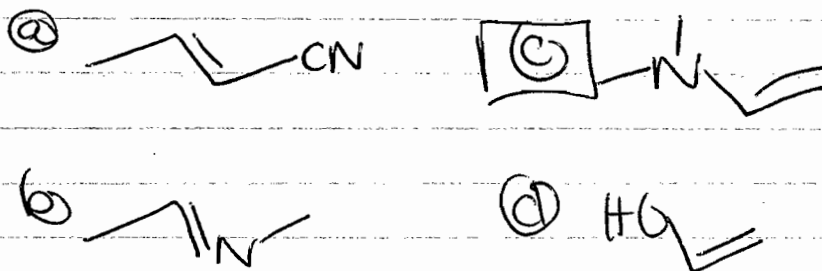
③ Synthesize amino acid



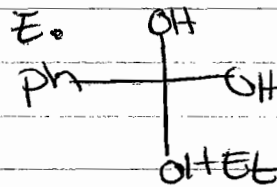
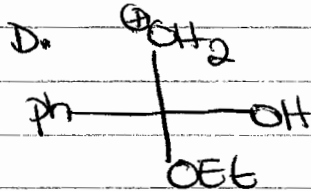
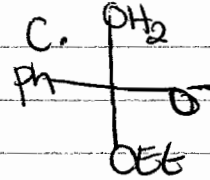
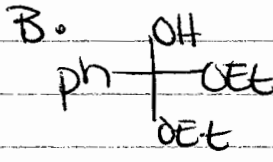
④ Which will not react?



⑥ Which has the most nucleophilic double bond?

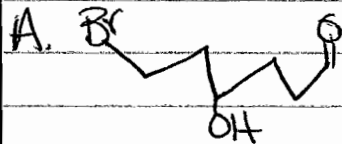
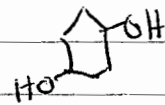


⑦ Which of the following is tetrahedral intermediate of acid catalyzed esterification of benzoic acid with ethanol?



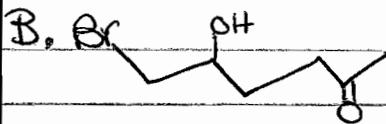
- A) ABC
 B) ADE
 C) A only
 D) C only
 E) DE

⑧ Choose the best synthetic route for synthesis of the following diol?



D. Mg Ether

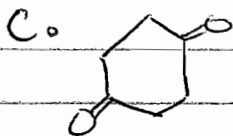
E. H₃O⁺



F. Ethylene glycol H⁺

G. i) CH₃MgBr ii) H₃O⁺

H. TMSCl, Et₃N

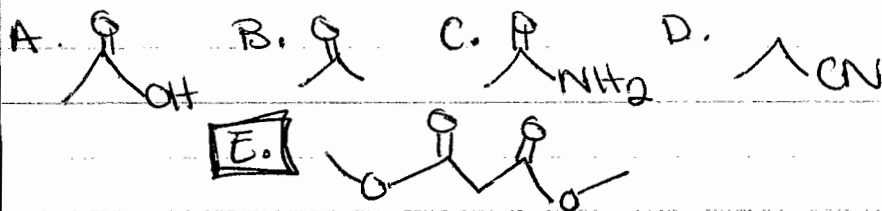


- A) AFDE
 B) BFDE
 C) AHDE
 D) BHDE

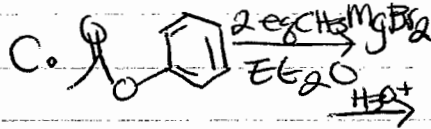
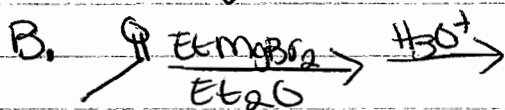
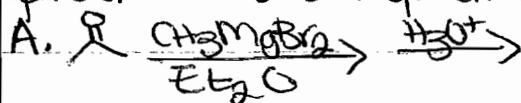
9 Why is triethylamine not effective in forming an imine when treated with acetaldehyde?

It would form a positively charged ammonium salt which can't be stabilized by proton loss.

10 Which will be completely enolized when treated with NaOH?



11 Which of the rxn sequences would produce t-butyl alcohol in good yields?



only A

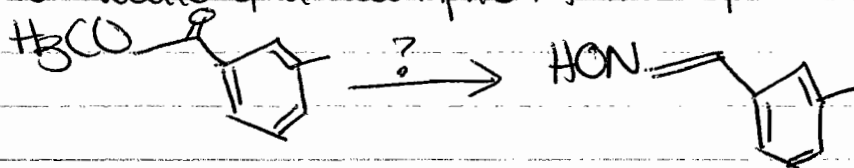
only B

A + B

A + C

They'll all work well

12 How would you accomplish this synthesis?



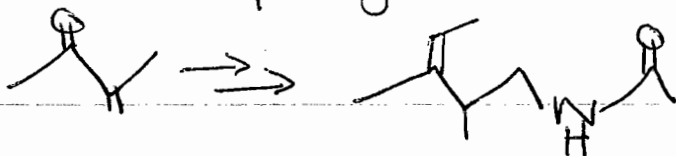
ANSWER:

DIBALH -# hexan, -78°C

H₂O

NH₂OH, pH=6

17) How do you get the following?



- | | |
|--|--|
| A. NH_3 | F. Acetamide |
| B. $\text{CH}_3\text{CH}=\text{PPh}_3$ | G. SOCl_2 |
| C. Acetyl chloride, pyridine | H. $\text{CH}_3\text{CH}_2\text{MgBr}$ |
| D. H_3O^+ , H_2O | I. H_2SO_4 , Δ |
| E. SOCl_2 , Pyr. | |

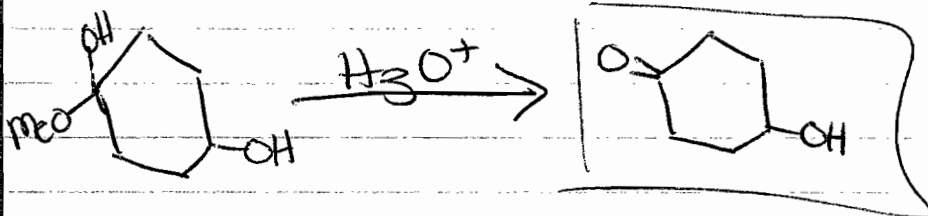
- AAEF ABC
 BAH CJ EGBD

18) How can you get the following in high yield? list step 1+2.



- | | |
|--|-------------------------------------|
| A. NaNH_2 in alcohol | <input type="radio"/> AC |
| B. H_2/Ni | <input type="radio"/> AD |
| C. cyclopentyl bromide | <input type="radio"/> ADE |
| D. Cyclopentanone, H^+ cat. | <input checked="" type="radio"/> DB |
| E. KOH , H_2O | <input type="radio"/> CE |

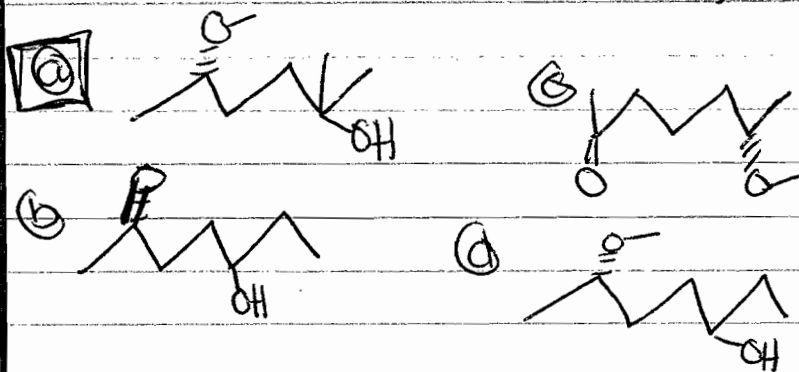
19) What's the major product?



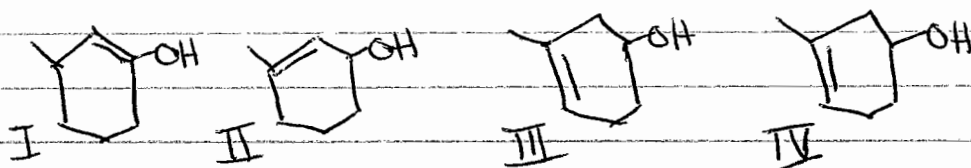
20) What's the major product?



- 1) $MgEt_2O$
 - 2) Acetone
 - 3) NH_4Cl
-



21) Which are enol tautomers of 3-methylcyclohexanone?



Ans: I + IV

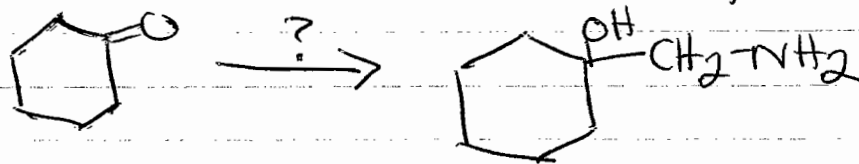
22) Hydrolysis of a nitrite proceeds through the formation of which of the following carbonyl compounds? Ans: amide

23) Which of the following exchanges the largest number of hydrogens for Deuterium when treated with KOD in D_2O ?

- A. 6-methyl-1,4-cycloheptanedione
- B. 2-methyl-1,3-cycloheptanedione
- C.

D.

24) Which would best accomplish?



a. CH_3NH_2 , acid cat. Δ

b. $\text{CH}_2=\text{NH}$ acid cat. Δ

c. HCN & NaCN

25) Which should not be classified as an acetal?

Ans: all are

(didn't get to copy choices)