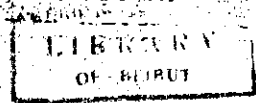


20

III C



52

8: 50 min

Chemistry 212

Jan 22<sup>nd</sup>, 1998

Quiz III

A. Salameh

X

Family Name: Abi Nader

First Name: Khalil Abi Nader

Student Number: 9618522 Section: 1

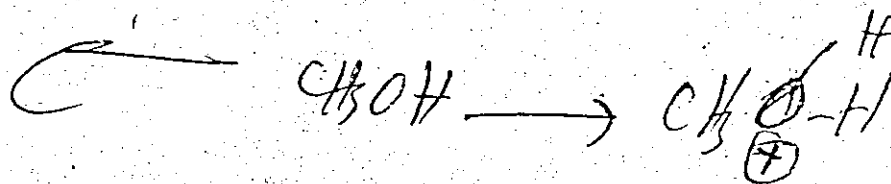
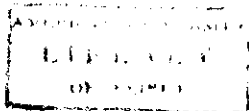
Question I 06 out of 20

II 26 out of 36

III 26 out of 27

IV 12 out of 17

Total 70 out of 100%



1

I (20%) Complete each of the following statements :

06

a- Which of the following amines : n-propyl amine , methyl ethyl amine or trimethyl amine has the lowest boiling point ?

4 trimethylamine as no H's

\*

b- Which of these alkyl halides cannot be used effectively in a Gabriel amine synthesis?  $(CH_3)_3CBr$ ,  $CH_3CH_2Br$  or  $CH_3CHBr$ .  
Imp.

? what about

0  $CH_3CHBr$   $(CH_3)_3C-Br$  (would undergo  $2^{nd}$  or  $3^{rd}$  order as tertiary carbons)

2-  $CH_2$  -  $CH_2$    
  $CH_3$

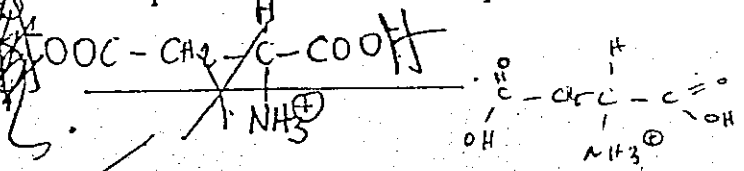
c- A visual chemical test used to distinguish between p-toluidine and benzyl amines involves the use of  $NaNO_2 + 3HCl$  followed by

2 ~~the use of highly activated system~~ specify  $\square$  or  $\square$

D-Arabinose

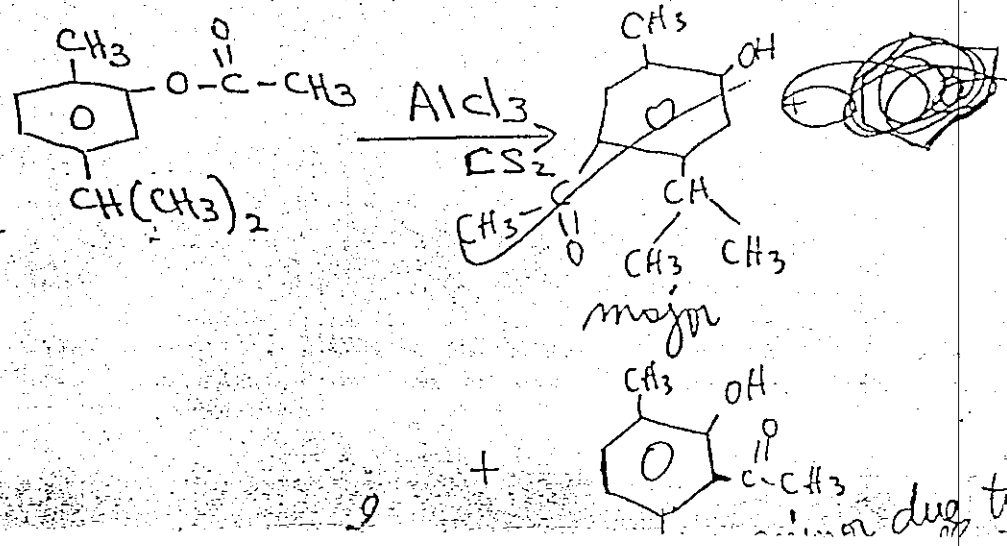
d- ~~D-Xylose~~ when subjected to a Kiliani - Fischer synthesis yields D-glucose and D-mannose.

e- The predominant form of aspartic acid in water of pH 1 would be

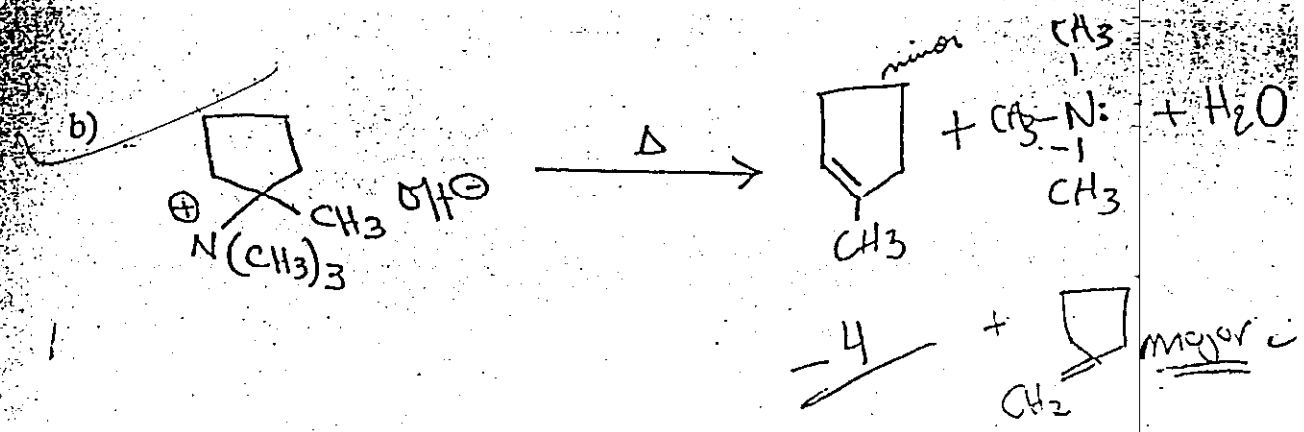


II (36%) Complete each of the following reaction specifying the major product where possible :

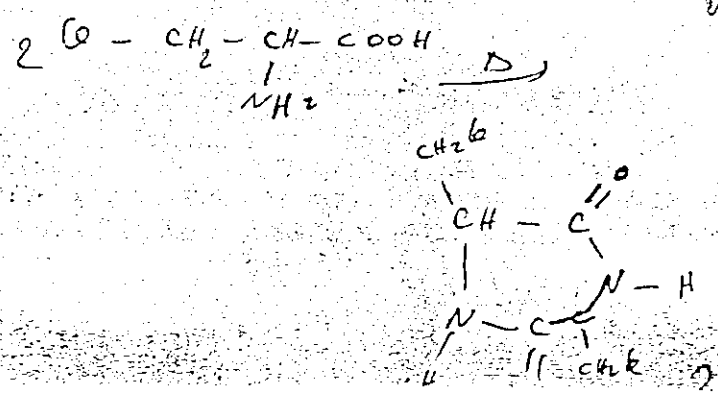
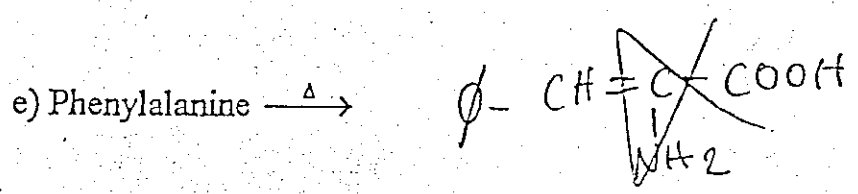
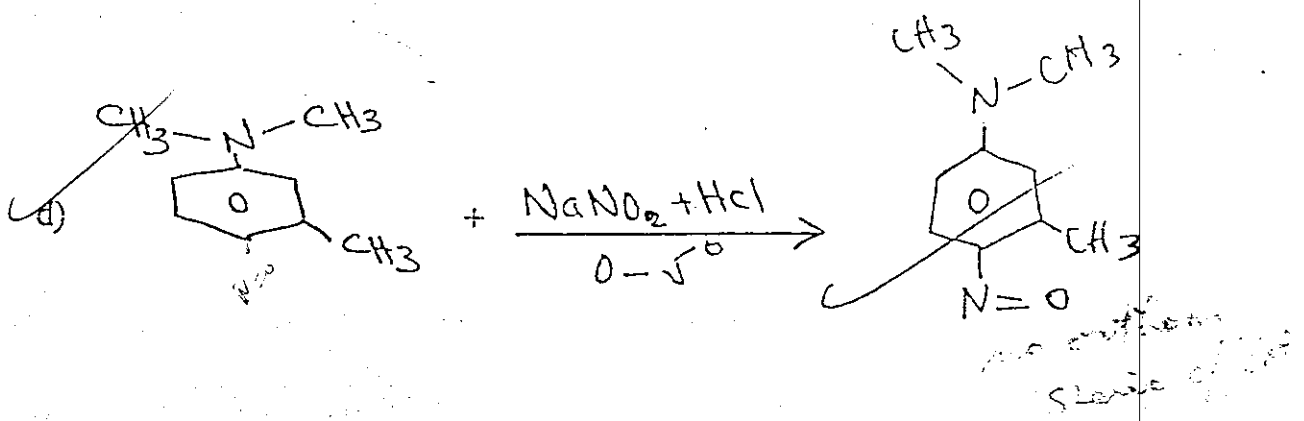
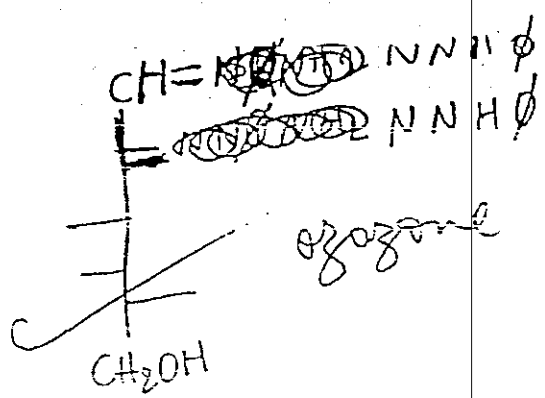
26



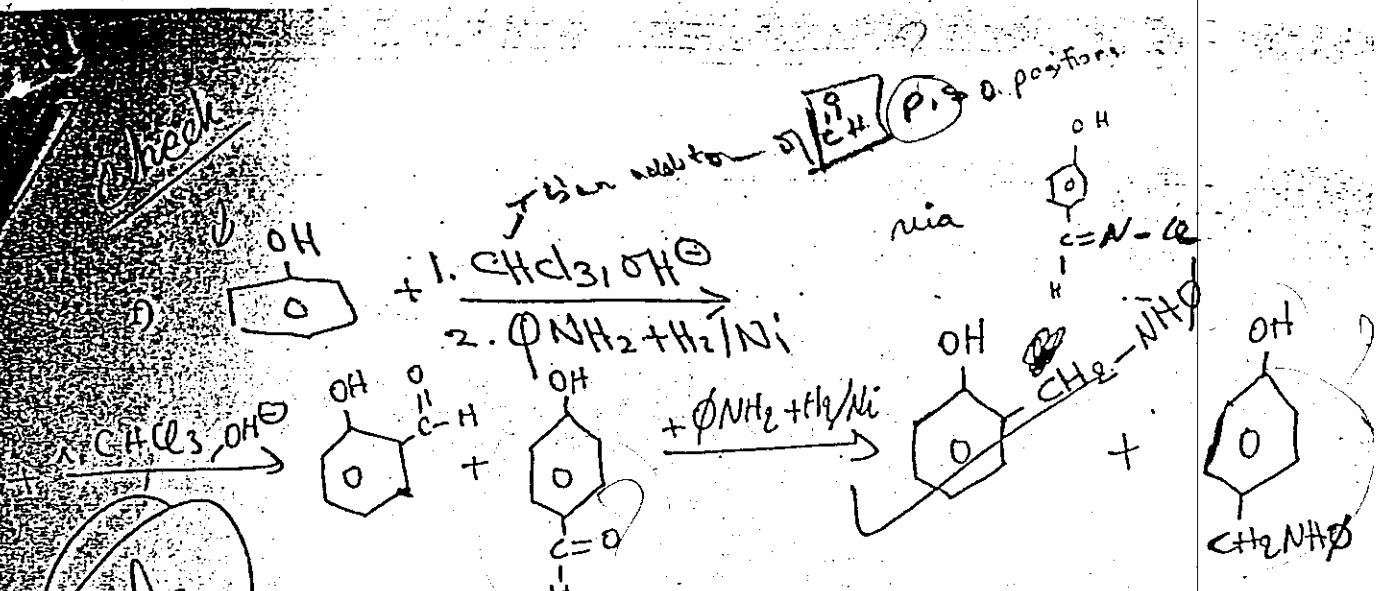
Fries Rearrangement



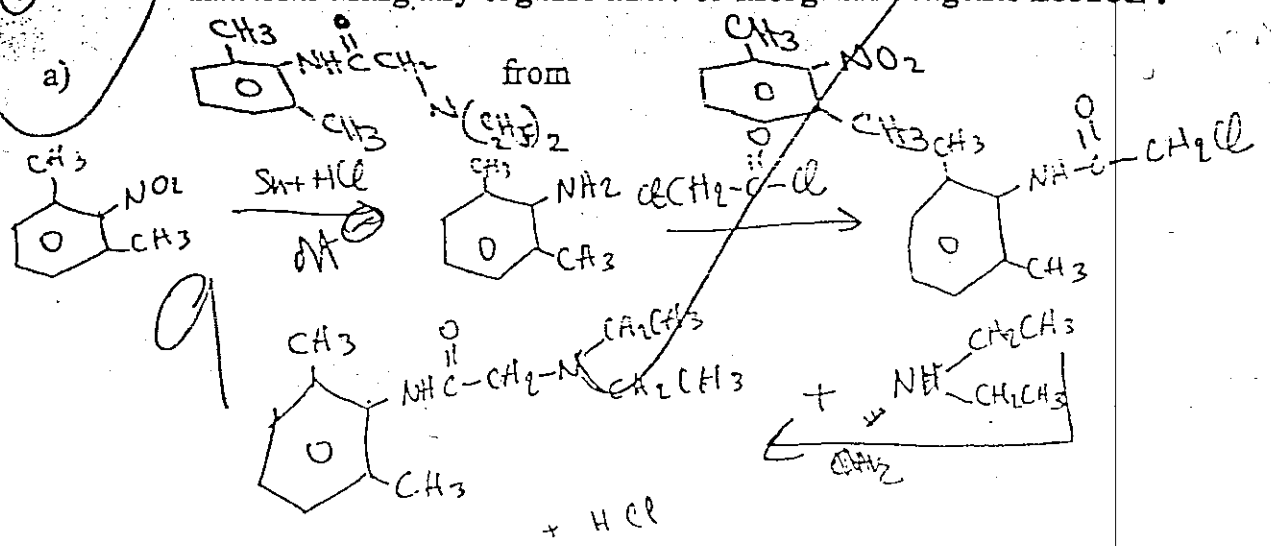
3)  $\text{D-Galactose} + \text{phenylhydrazine} \rightarrow$



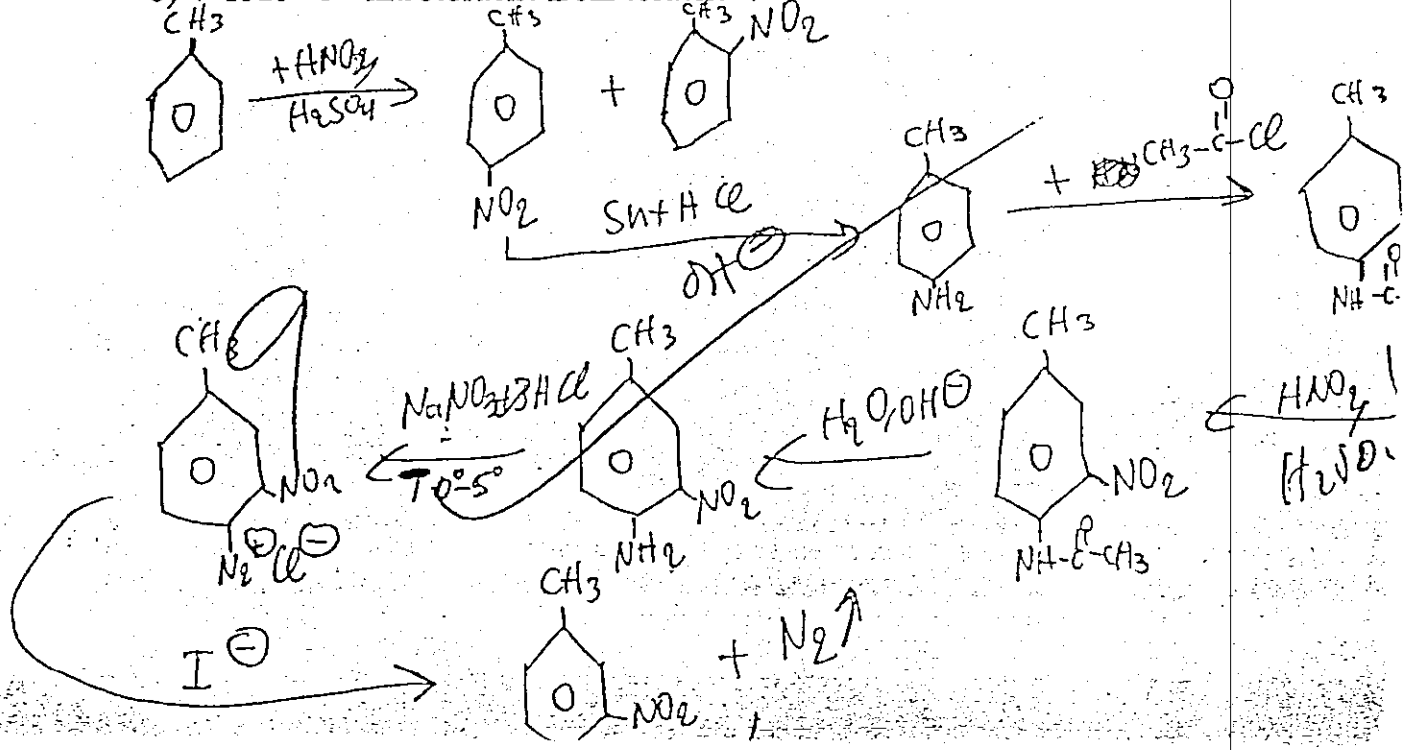
check

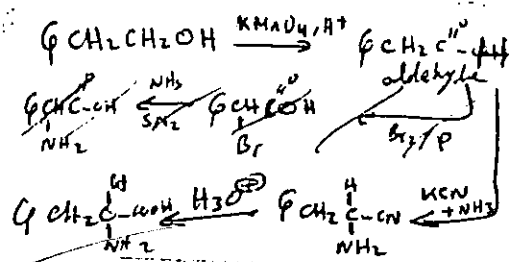


(27%) Synthesize each of the following from the indicated starting material using any organic and / or inorganic reagents needed.

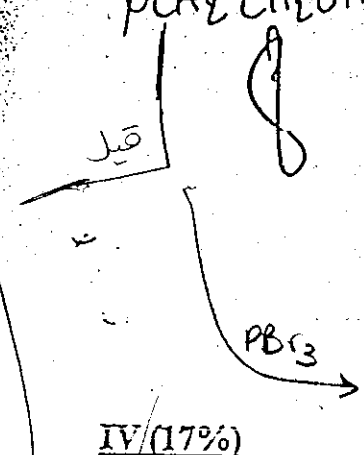
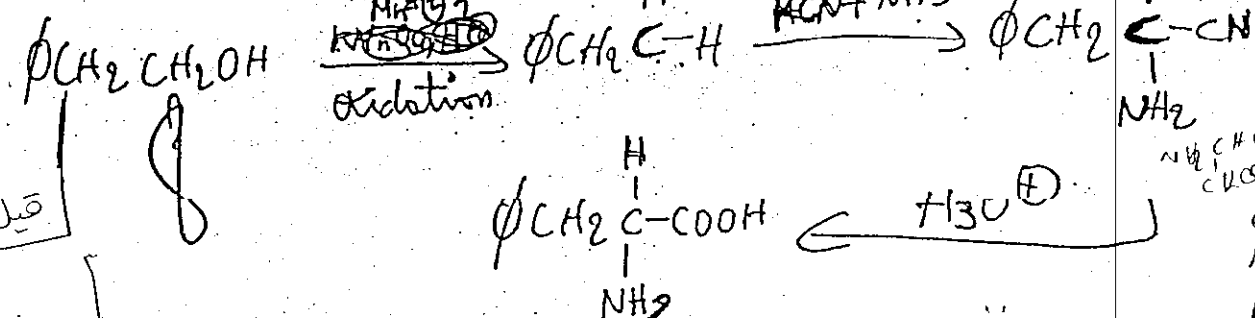


b) 4-Iodo-3-nitrotoluene from toluene





Phenylalanine from  $\beta$ -phenylethanol

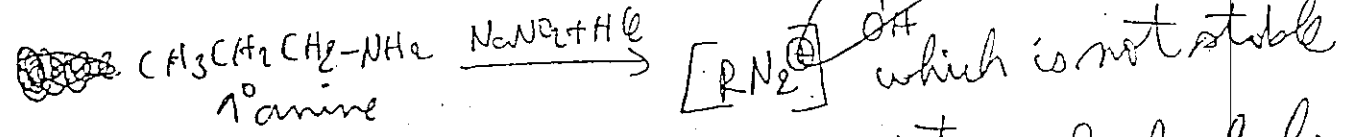
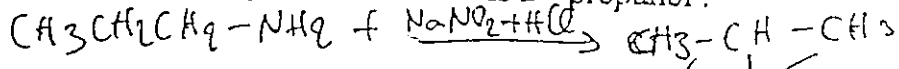


using Strecker method

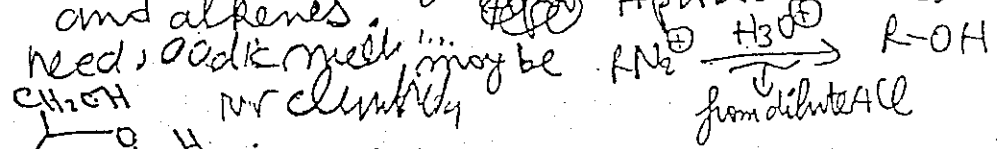
IV (17%)

a) Give a reasonable explanation for the following observation :

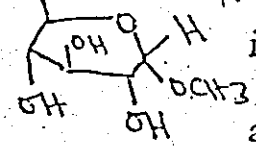
The major product formed on treatment of n-propylamine with sodium nitrite in dilute hydrochloric acid is 2-propanol.



3  $\rightarrow$  the intermediate forms a mixture of alcohols and alkenes. A probable mechanism



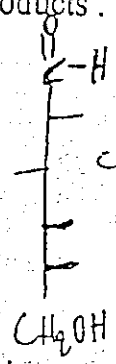
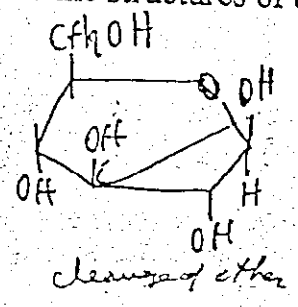
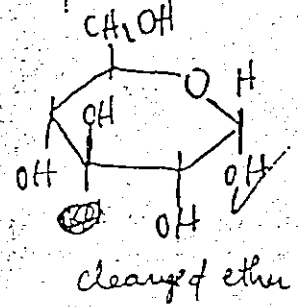
b) If



is treated with dilute HCl and the solution is

allowed to stand it produces three products other

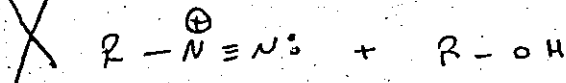
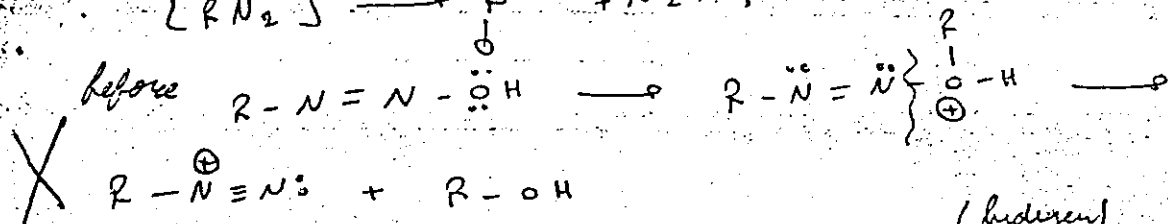
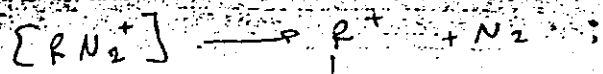
than methanol. Give the structures of these three products.



hydrolysis of acetal

note: acetals are unreactive,  $\text{CH}_3\text{OH}$

... is not stable with acid to give alcohol



(hydrazine)  
methyl shifting

