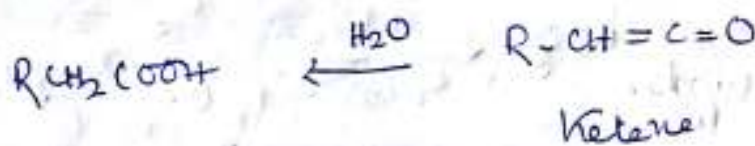
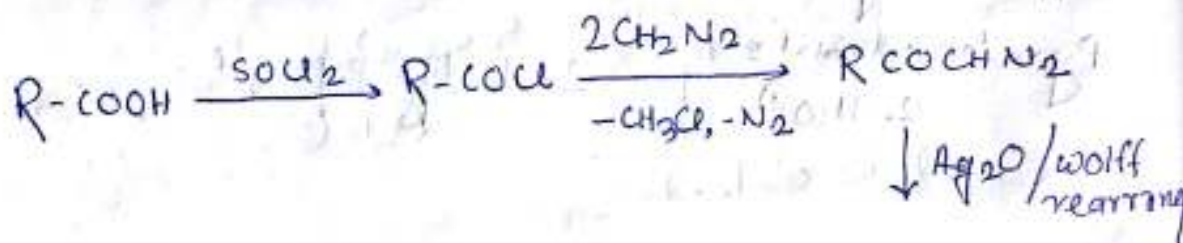
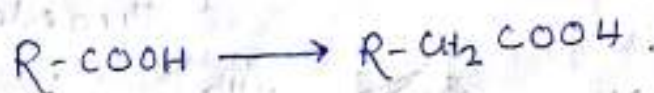
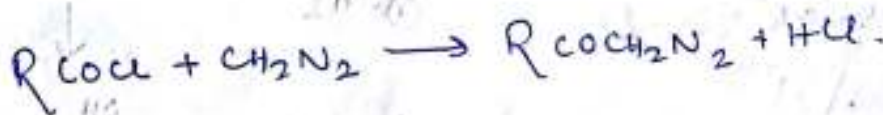


Arndt-Eistert homologation:

The reaction consists in increasing the length of the carbon chain by one methylene group in carboxylic acids.



excess diazomethane is used to consume the liberated HCl.



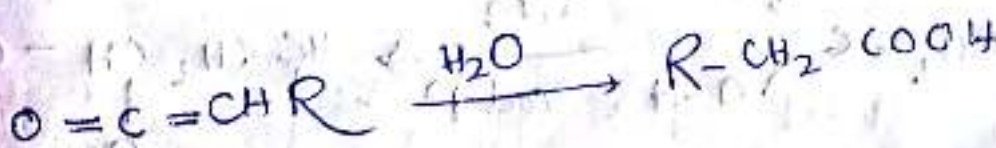
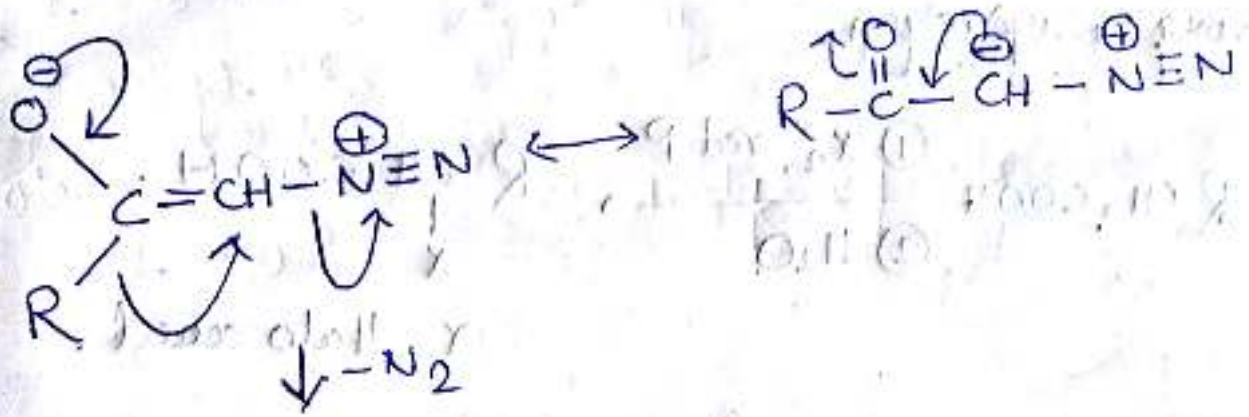
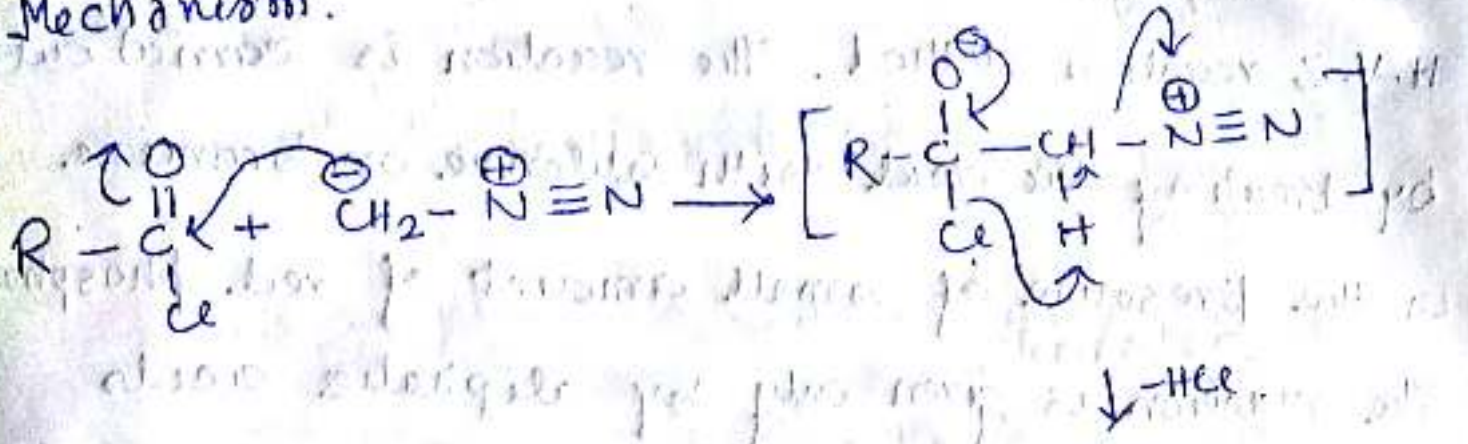
In absence of excess diazomethane, diazoketone is lost in reacting with HCl to form chloromethyl ketone.

Ardt - Eistort



Besides Hg_2O , the reaction is catalyzed by colloidal platinum, silver, copper etc.

Mechanism.

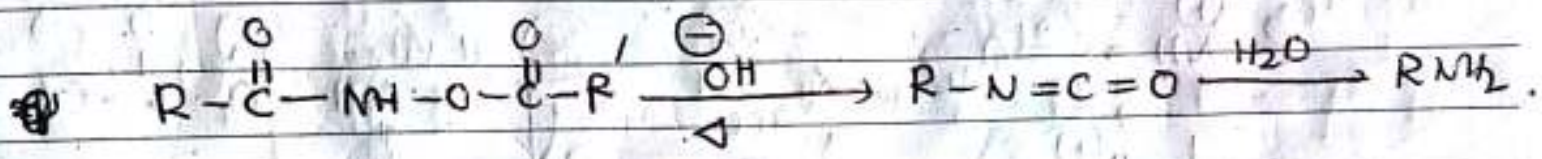


Ketene

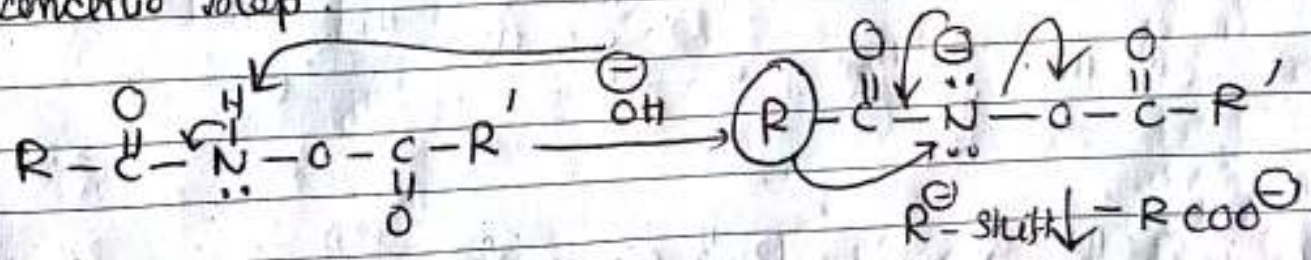
Satyajit Biswas

Lossen rearrangement

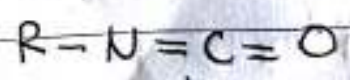
The O-acyl derivatives of hydroxamic acids, $RCONHOAc$, give isocyanates, $RNCO$, when heated with bases or sometimes just heating. The reaction is called Lossen rearrangement.



This involves an intramolecular antiperiplanar 1,2 shift in which the elimination of the O-acyl group and the migration of the alkyl or aryl group occurs in the concerted step.

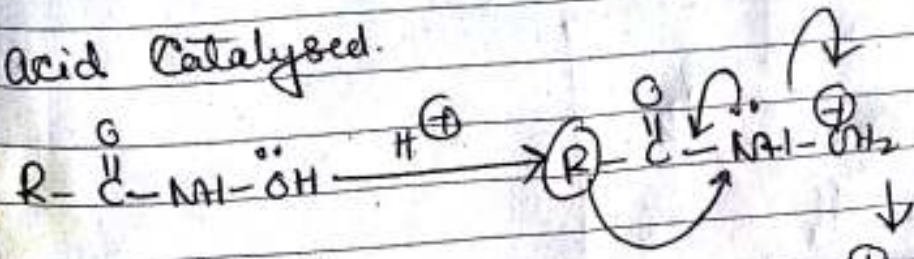


O-Acyl hydroxamic acid.



Isocyanate.

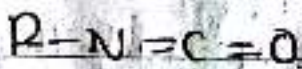
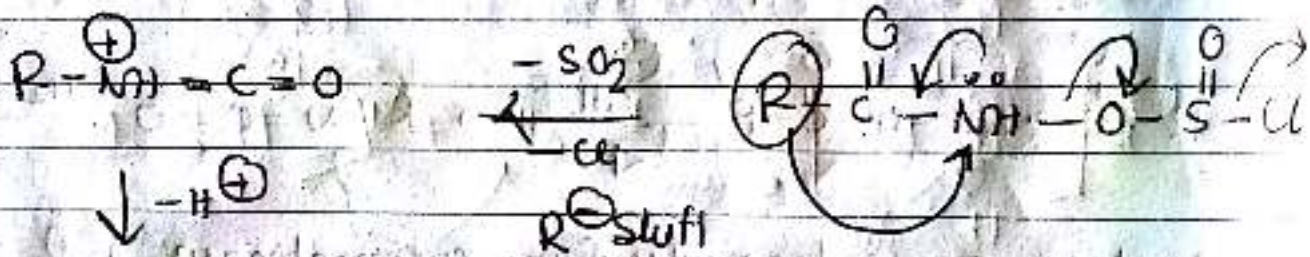
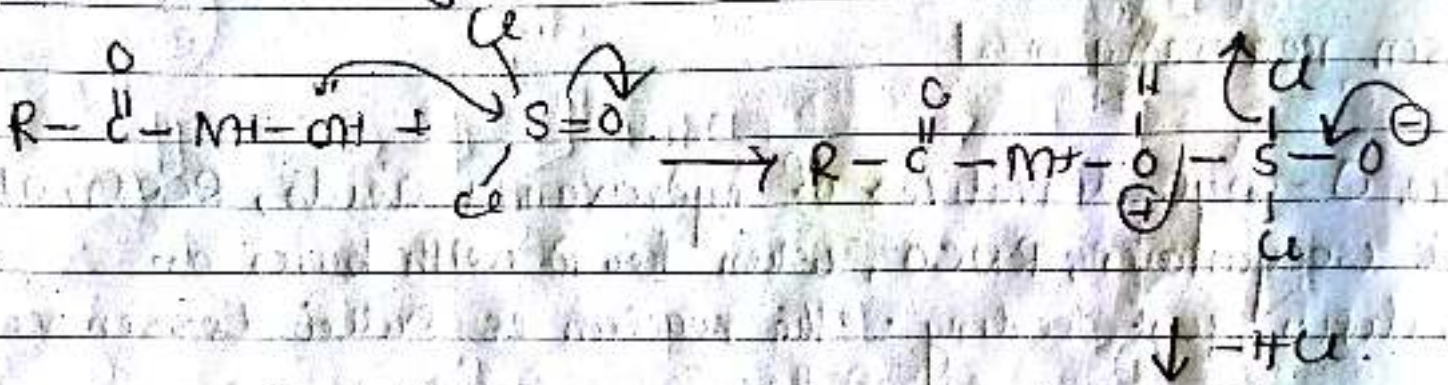
Acid Catalysed.



Base Catalysed



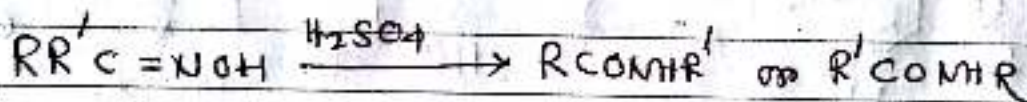
Hosson Rearrangement



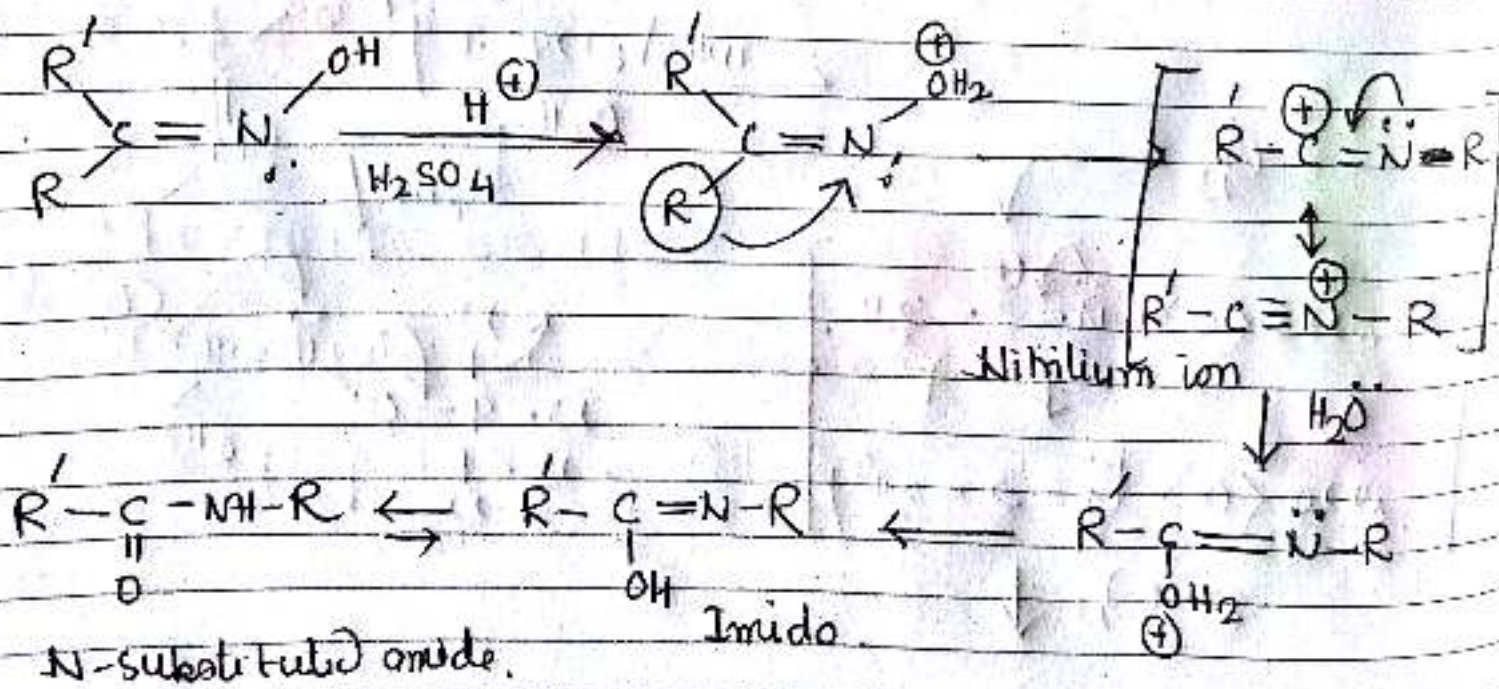
Satyajit Biswas

Beckmann Rearrangement :

Beckmann rearrangement is an acid catalysed transformation of an oxime to N-substituted amides under the influence of an acid such as H_2SO_4 , $SOCl_2$, PCl_5 , P_2O_5 , SO_3 , $C_6H_5SO_2Cl$.



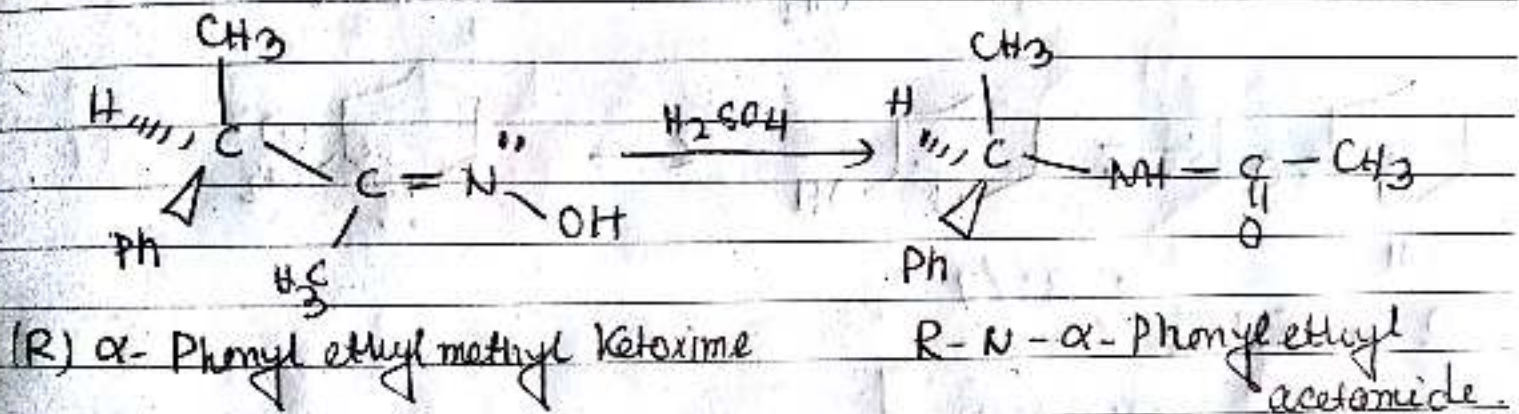
It is found that the migrating group is always trans to hydroxyl group or leaving group. Thus the reaction is stereospecific.



Beckmann Rearrangement
When the migrating group

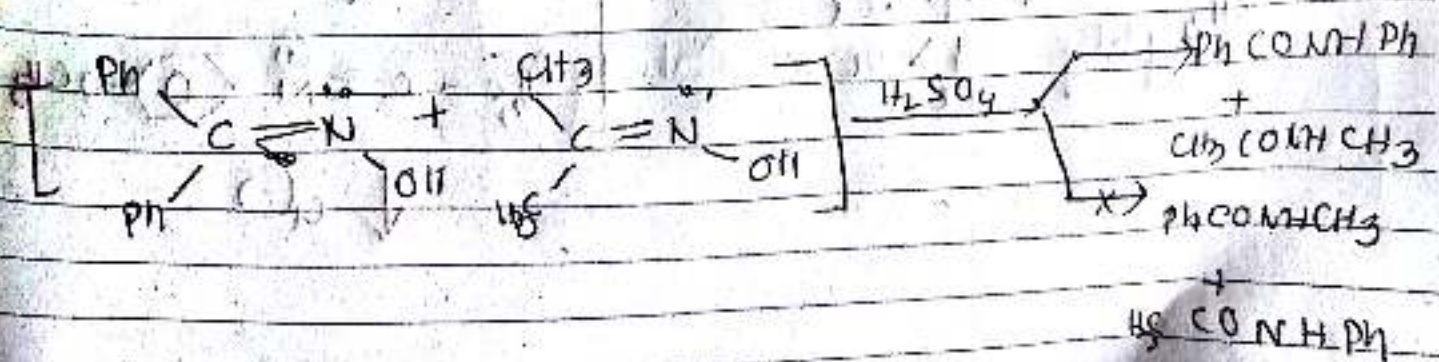
FRIDAY

Rearrangement occurs with retention of configuration in the migrating group.

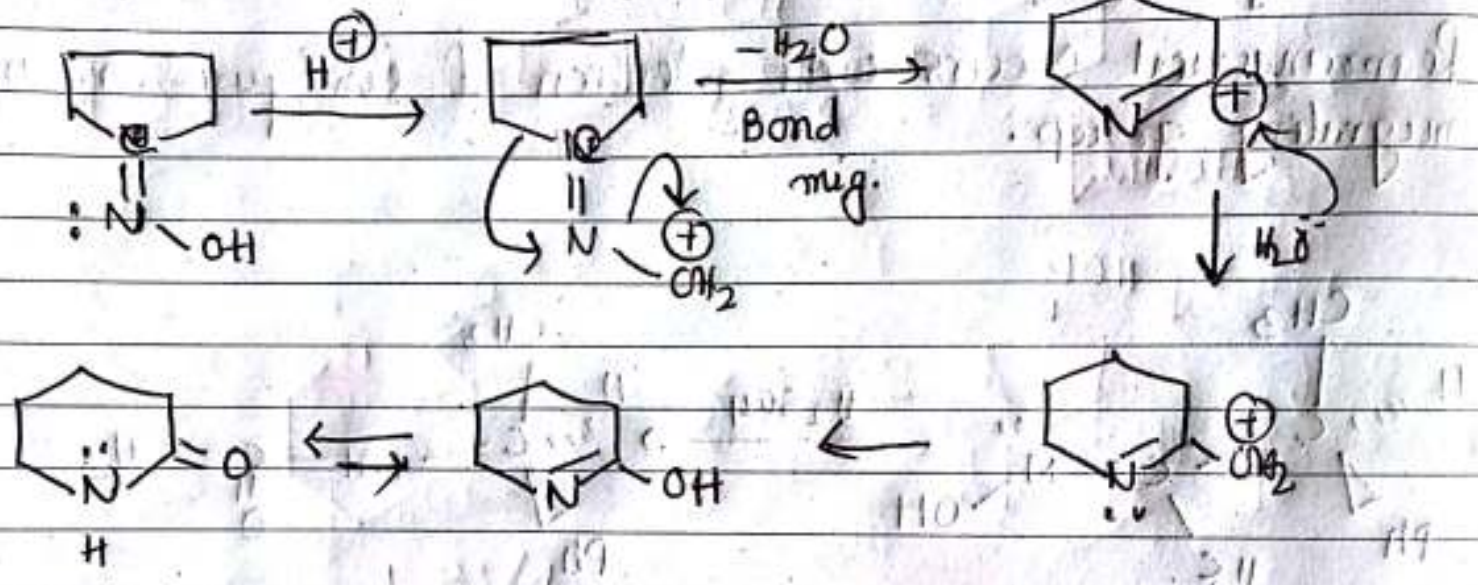


This observation suggests that the migrating group never becomes free from the rest of the molecule during rearrangement.

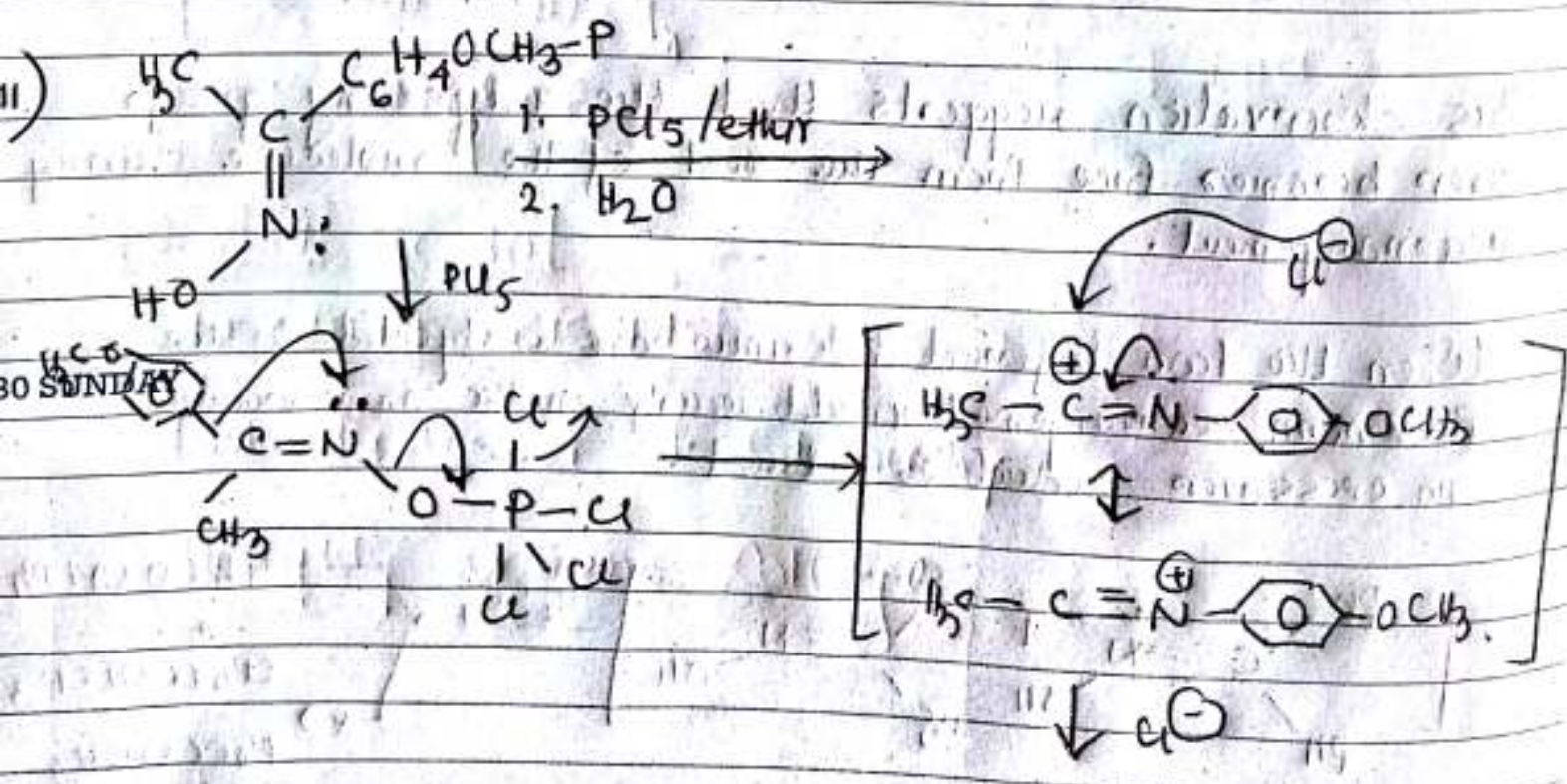
When the two different ketoximes are subjected to the Beckmann rearrangement simultaneously in the same solution, no crossover product is obtained.



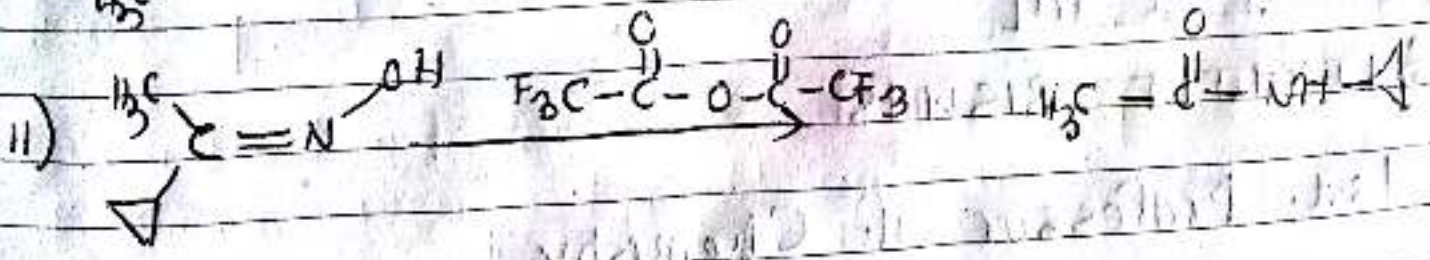
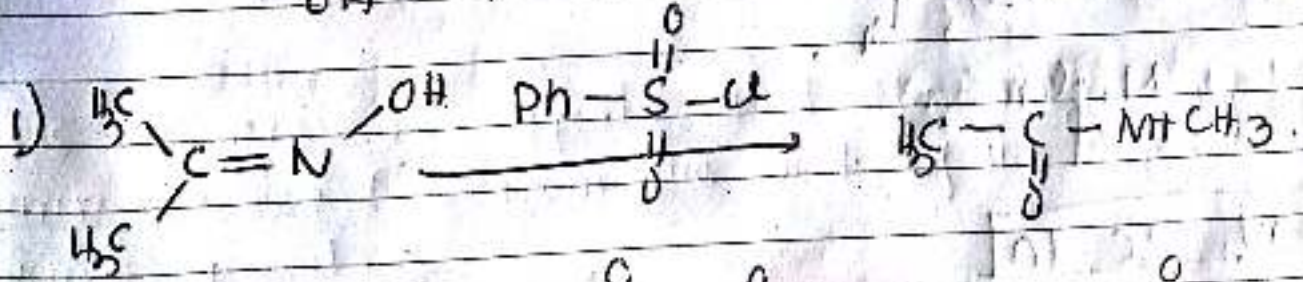
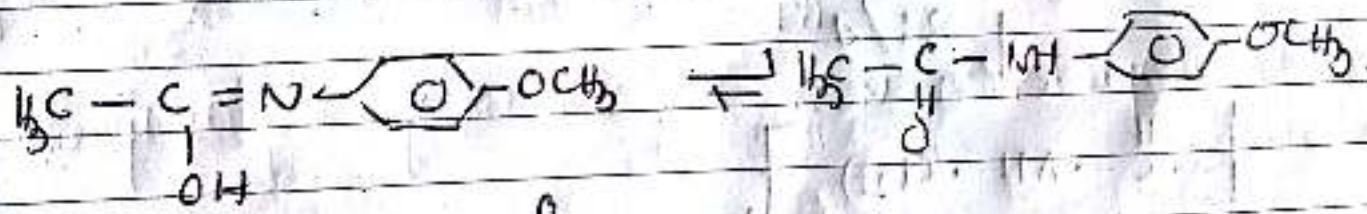
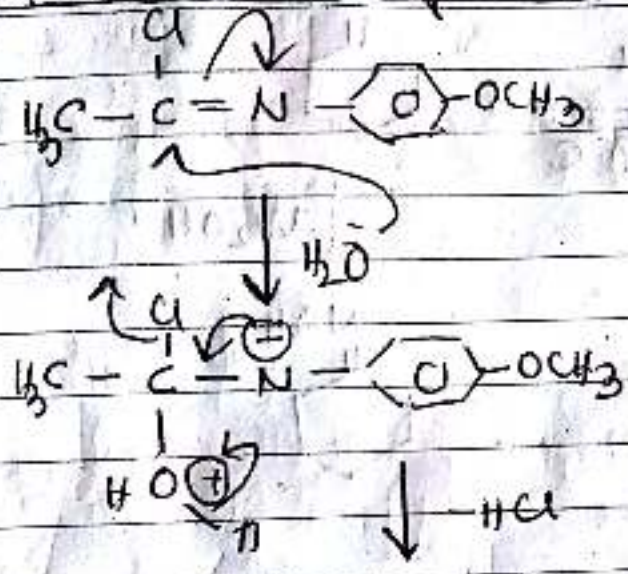
Beckmann Rearrangement



2-piperidone

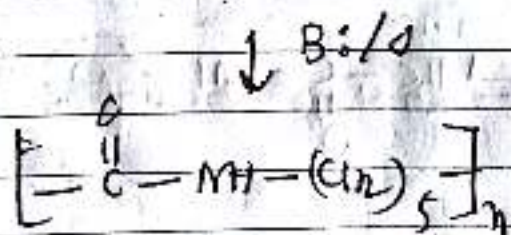
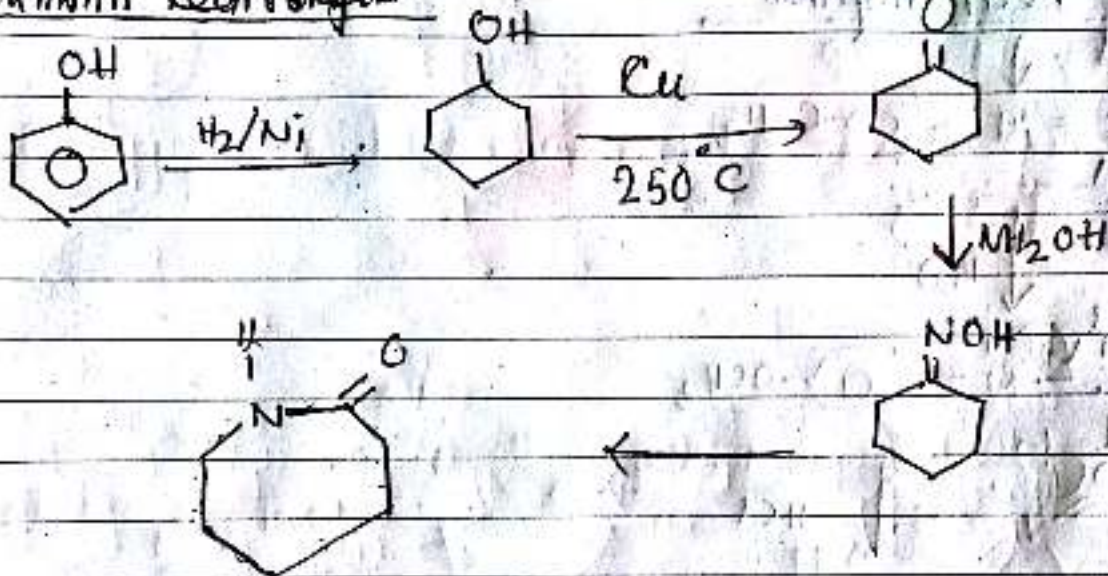


Beckmann Rearrangement



Beckmann Rearrangement

TUESDAY



Nylon 6

Sem-IV CC-10

SATIYAJIT BISWAS

Asst. Professor of Chemistry

Hooghly Women's College