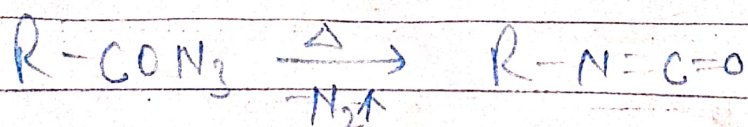
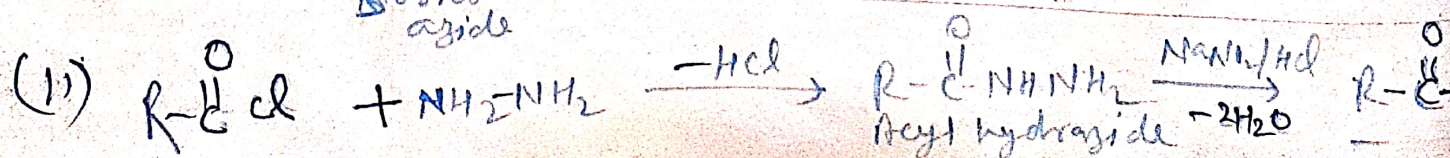
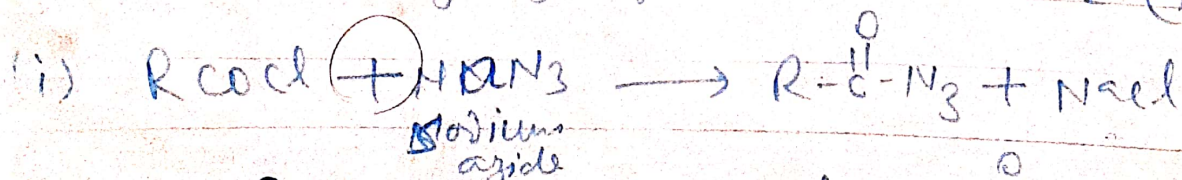


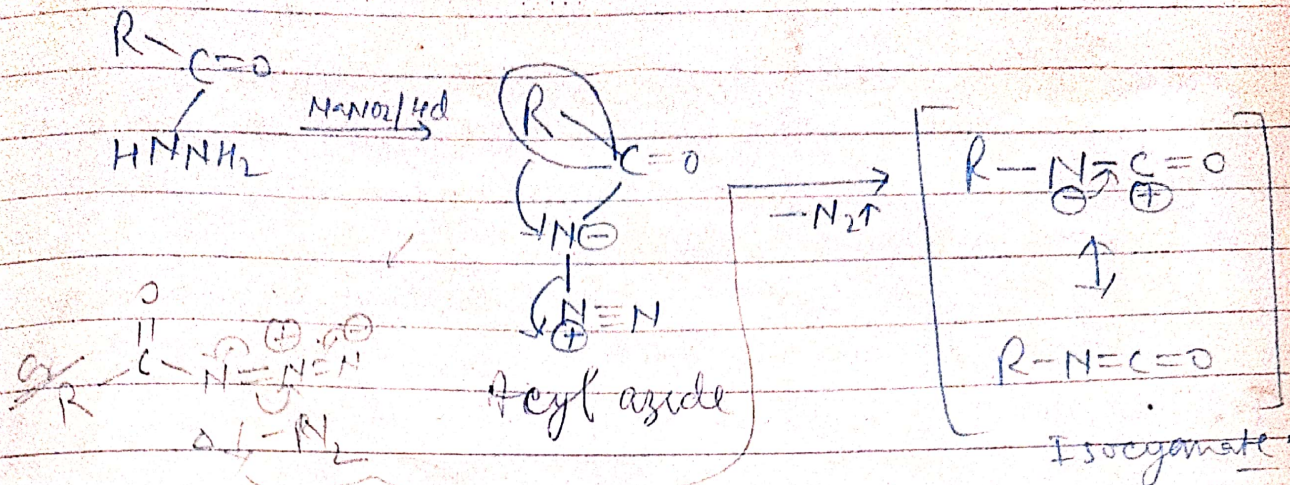
III The Curtius Rearrangement → The thermal decomposition of Acyl azide to give isocyanate is called Curtius Rearrangement.



[The Acyl azides can be obtained by the substitution of acid chlorides with NaN_3 or by the reaction of acyl hydrazides with HNO_2 (NaNO_2/HCl).



Mechanism → Its mechanism is quite similar to Hoffmann
 rxn as represented below: -



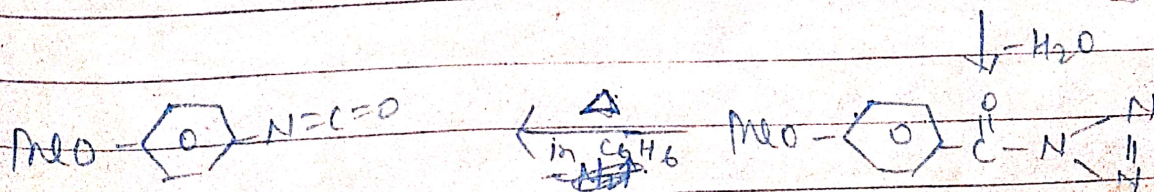
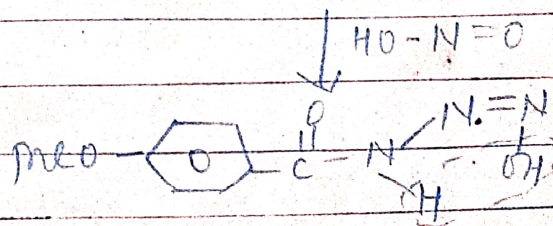
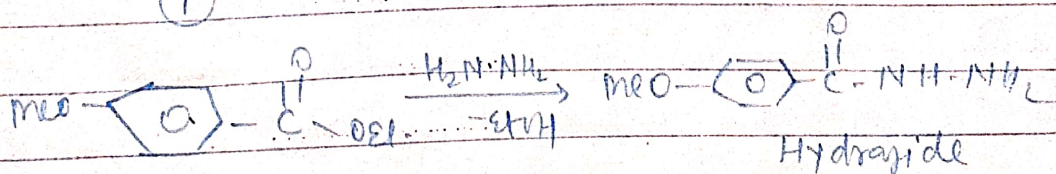
Thus if the reaction is carried out in inert solvents (aprotic solvent, e.g. CHCl_3) then the isocyanate ^{can} ~~may~~ be isolated. But if the reaction is carried out in water or alcohol then the products are amines.

Acyl urea as is obtained in Hoffmann reaction. This is a very general rxn & can be applied to almost any carboxylic acid, aliphatic, aromatic, unsaturated & containing many functional groups.

Here migration of R & loss of N_2 is also a concerted process.

Application →

(1)



Artsyl isocyanate

Acid Azide