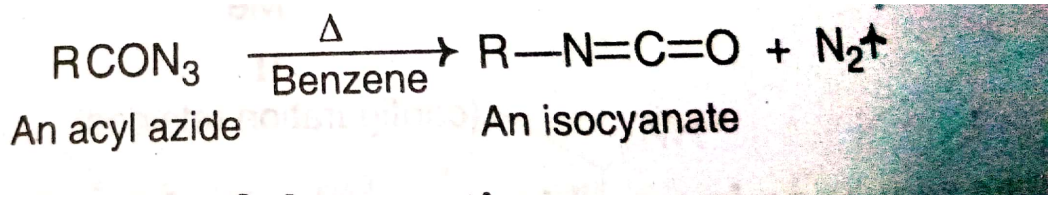

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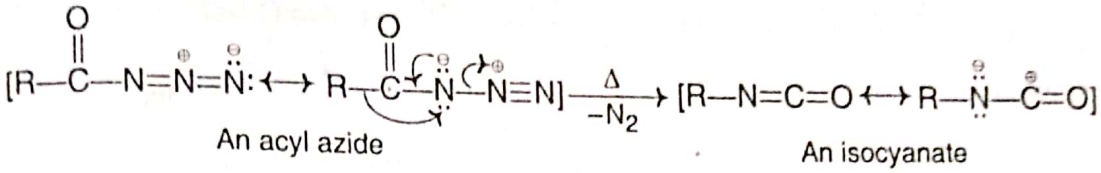
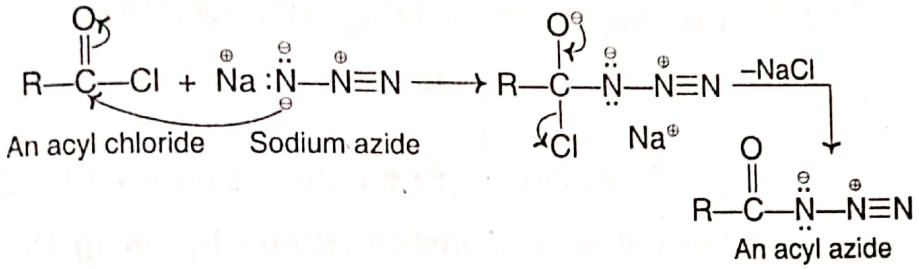
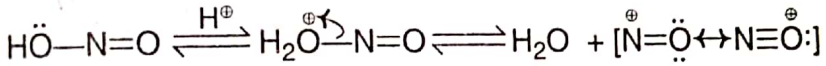
Solution:

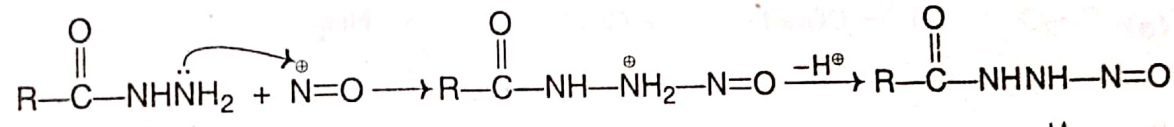
(a) The mechanism of this rearrangement involves migration of the group R– from carbon to nitrogen with simultaneous loss of N_2.

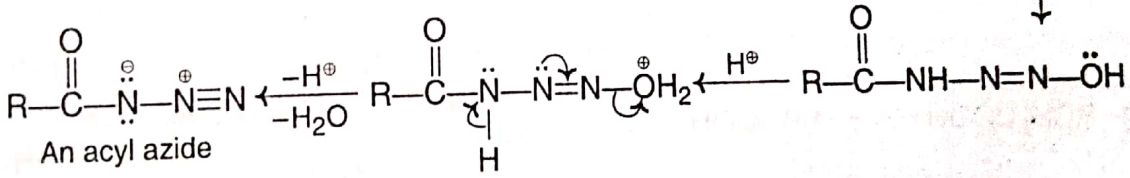


(b) Acyl azides can be prepared either by treatment of acyl halides with sodium azide or by treatment of acyl hydrazines (hydrazides) with nitrous acid.

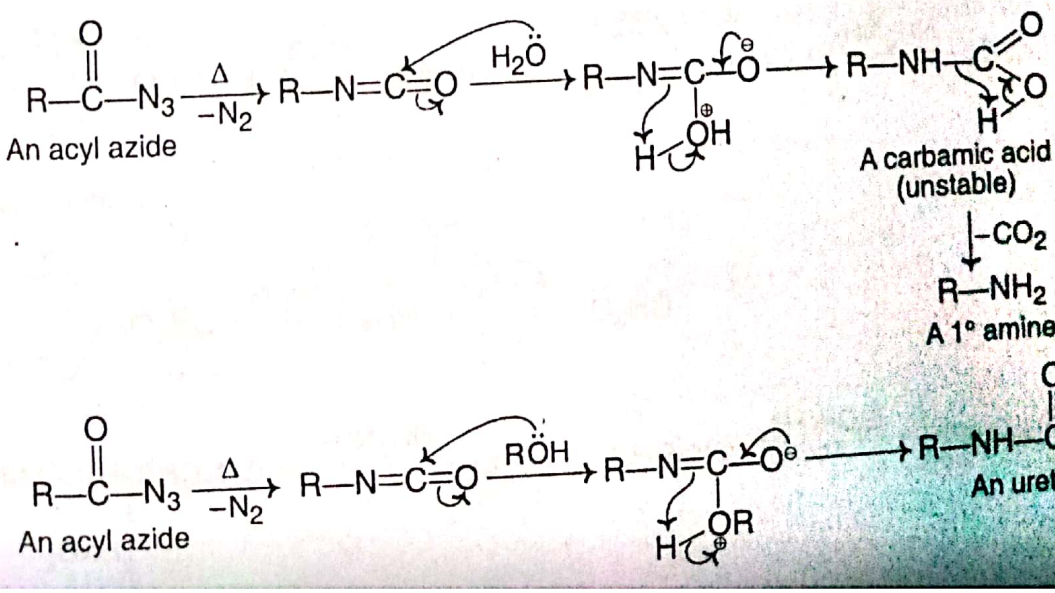








(c) If the reaction is carried out in water, the product is a primary amine and when it is carried out in alcohol, an urethan (carbamate) is the product.



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