

Reaction Intermediates: →

Page No.

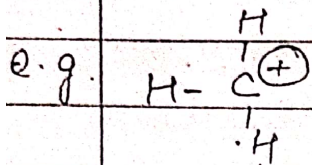
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Date:

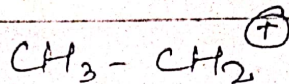
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① Carbonium ion: →

Short-lived +vely charged species formed during course of a chemical reaction is called Carbonium ion or Carbo-cation.



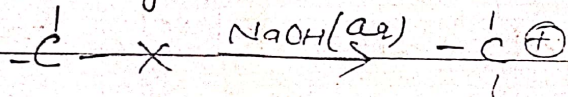
Methyl Carbonium ion.



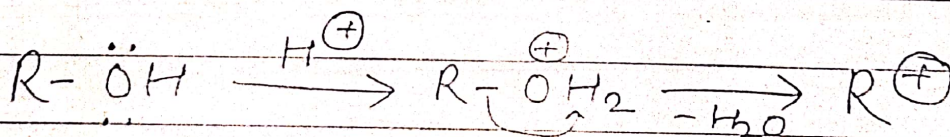
Ethyl Carbonium ion.

Generation: →

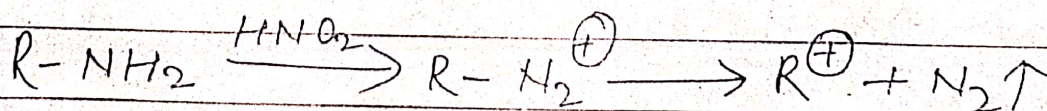
i) Solvolysis of C-X bond (where X=halogen).



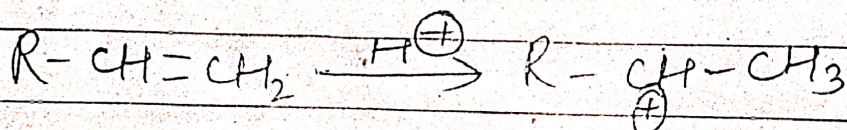
ii) Protonation followed by dehydration of alcohol.



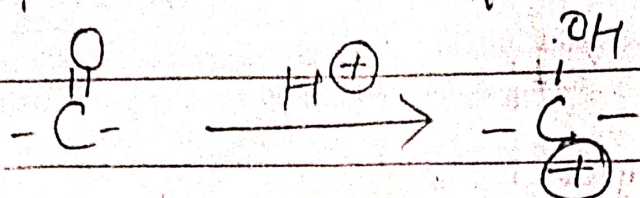
iii) Deamination of amines



iv) Protonation of alkenes.

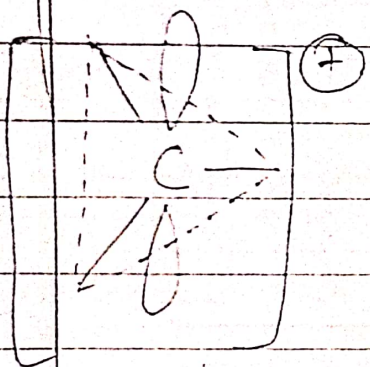
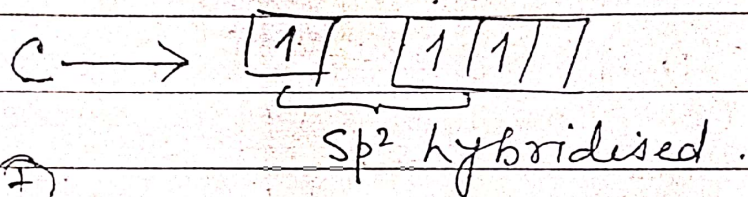


1. Protonation of Carbonyl Compounds



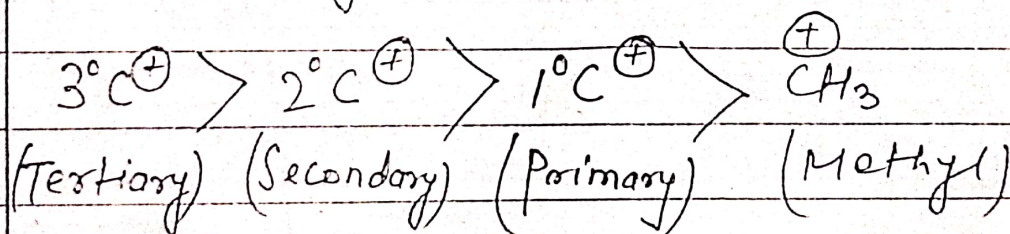
Shape & Structure: \rightarrow

Generally in such species carbon atom is sp^2 hybridised having one vacant p-orbital lying perpendicular to the plane.

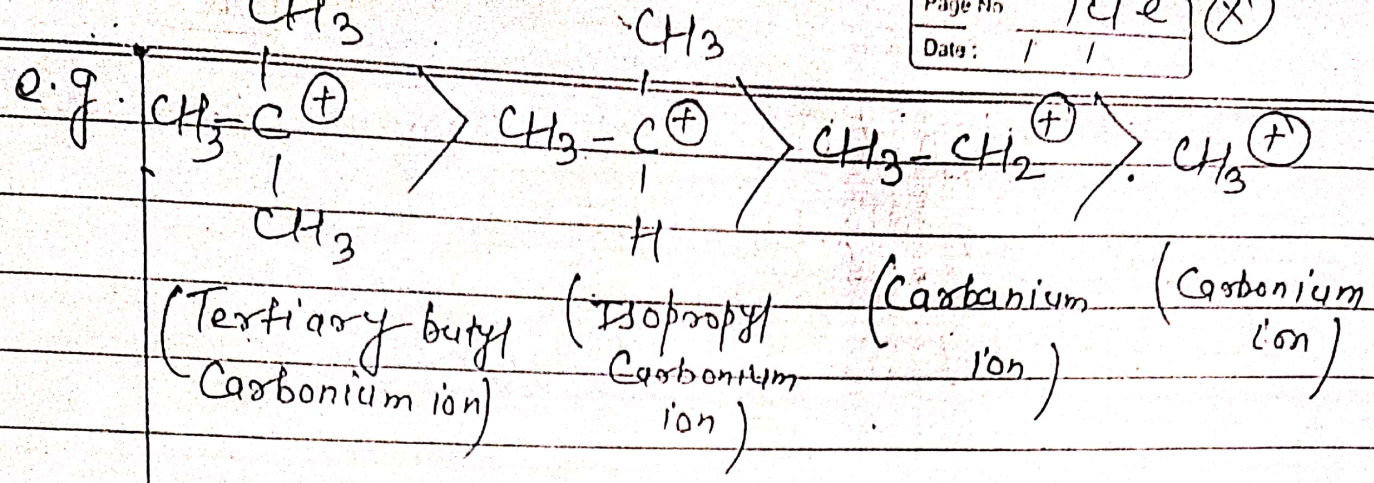


Shape & Str. \rightarrow Triangular planar.

Stability: \rightarrow



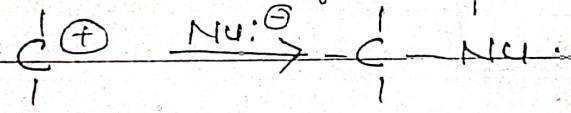
This can be explained on the basis of +I effect of the alkyl groups or by hyperconjugation of



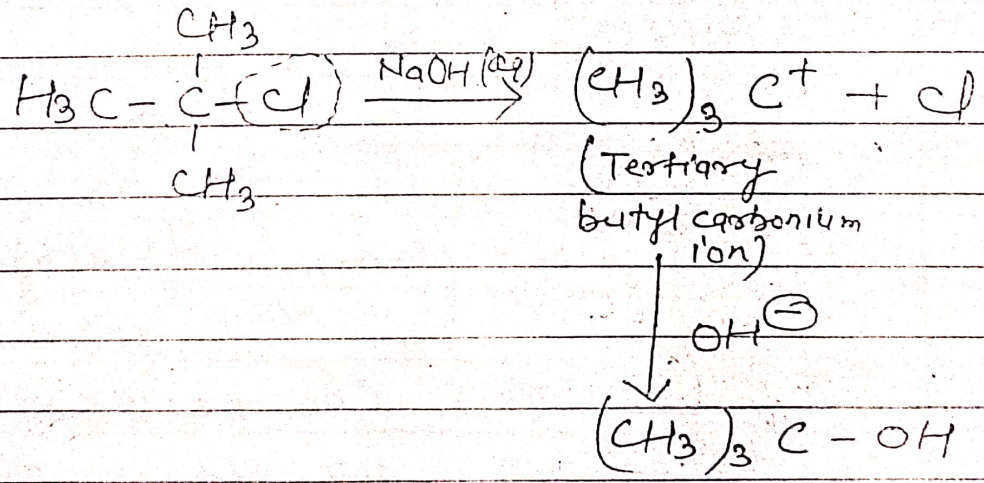
Reactions of Carbonium ions

This ion undergoes mainly two types of reactions:-

- (i) Combination with a nucleophile to give a product.
- (ii) Elimination of a proton. [If any].



eg. (i) Substitution reaction



(ii) Elimination reaction

