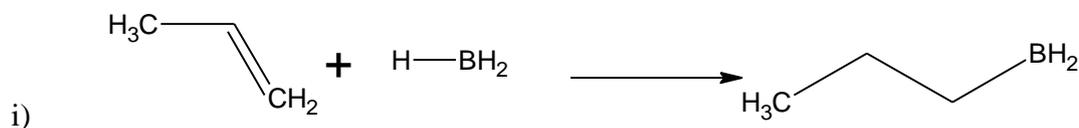


Question:

Explain the following:

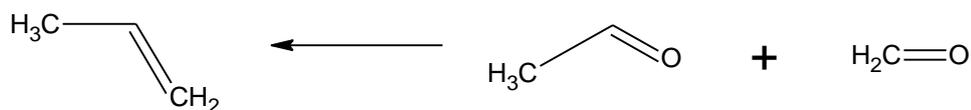
- i) Hydroboration follows Markovnikov's rule.
- ii) Ozonolysis reaction gives the position of the double bond of the alkene.
- iii) Alkynes are less reactive than alkenes towards electrophilic addition reactions.
- iv) Addition of HBr to propenenitrile does not follow Markovnikov's rule.
- v) Addition of HBr to conjugated diene gives 1,2 addition and 1,4 addition products.

Solution:



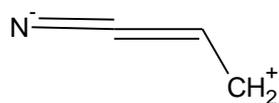
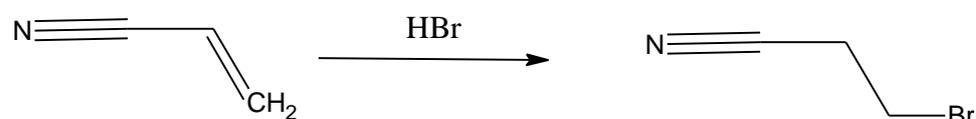
For BH_3 δ^- on H, δ^- on BH_2 H is more electronegative than B.

- ii) From the products we can construct primal molecule

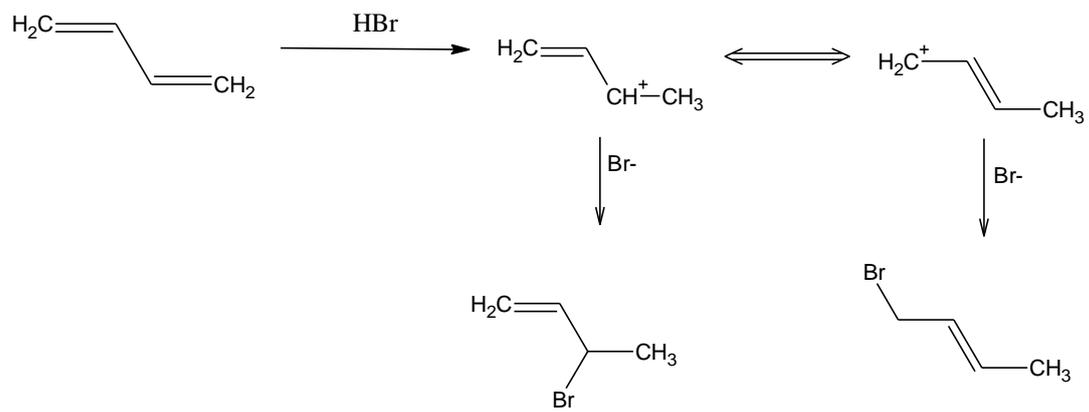


- iii) Alkynes form a vinyl carbocation as an intermediate in electrophilic addition reactions. Vinyl carbocations are unstable compared to the carbocations formed during the electrophilic addition reactions of alkenes. So, alkenes react faster than alkynes towards electrophiles.

- iv)



CN group has $-M$ effect.



v)