

ORGANIC CHEMISTRY, PAPER-VII ^{1.}

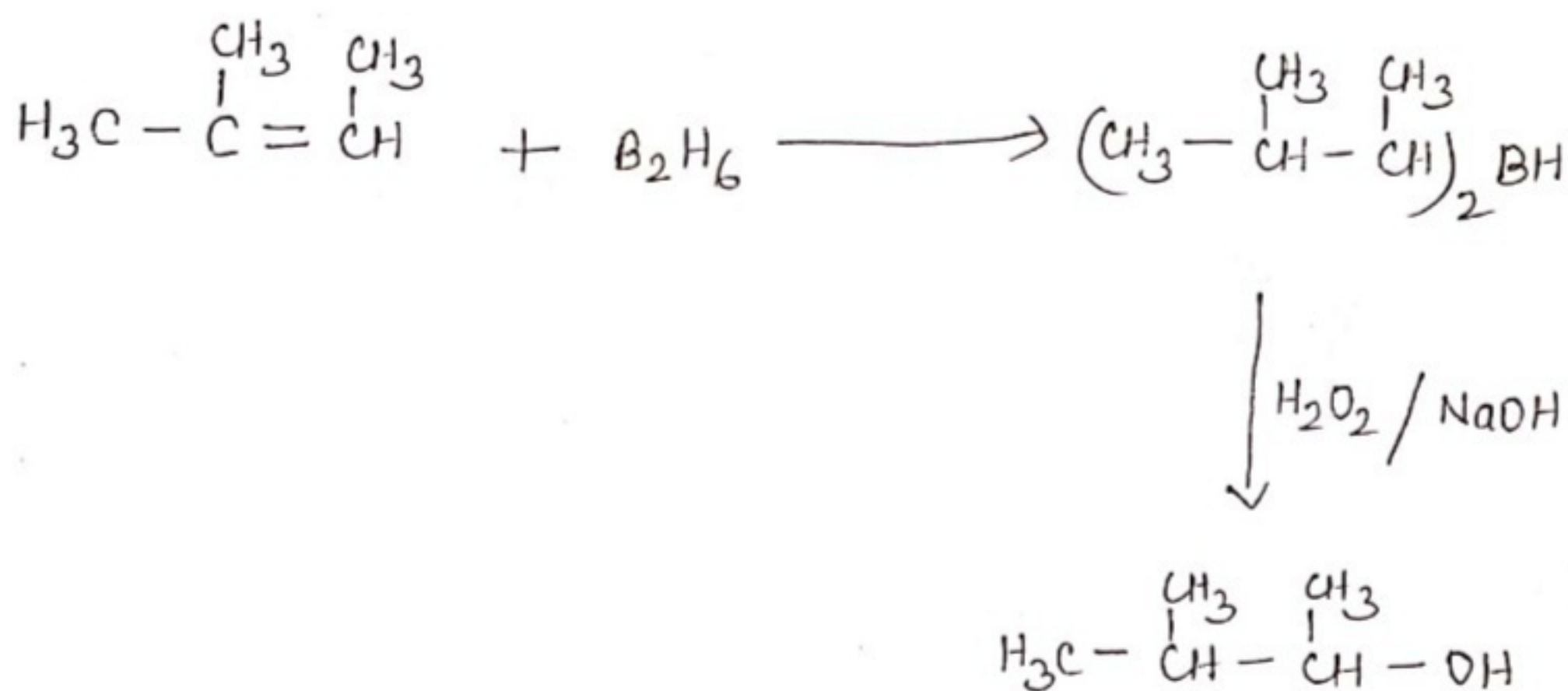
03/09/2020 DEGREE-III (H) By-Dr.Rinky

SYNTHETIC REAGENTS, LECTURE-17

TOPIC :- DIBORANE CONTINUED..

Reactions of Organoboranes

a. Transformation of Organoboranes to alcohols

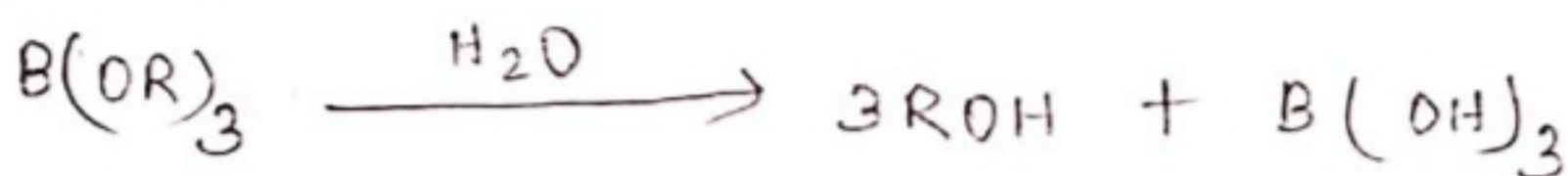
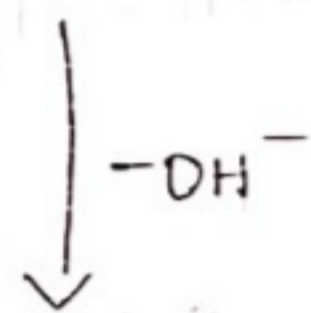
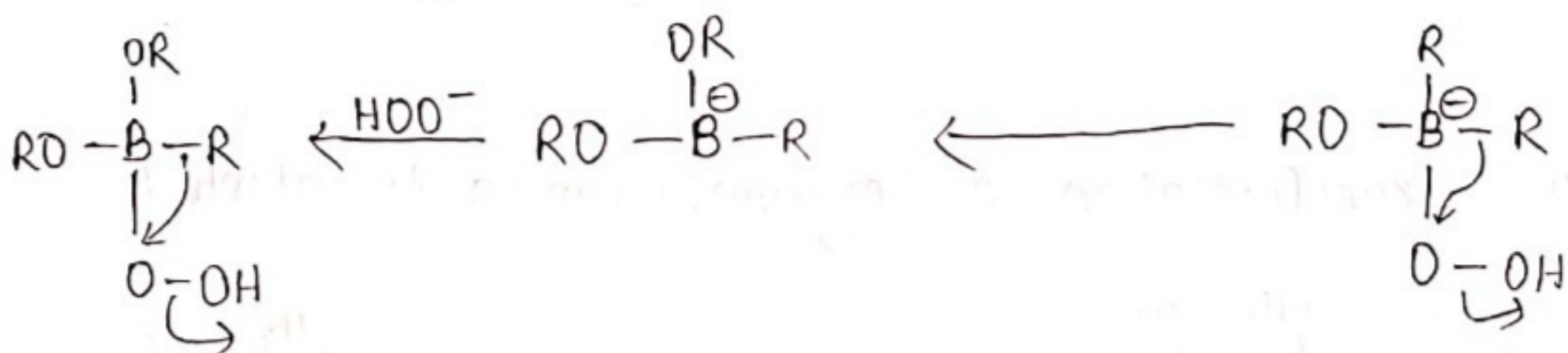
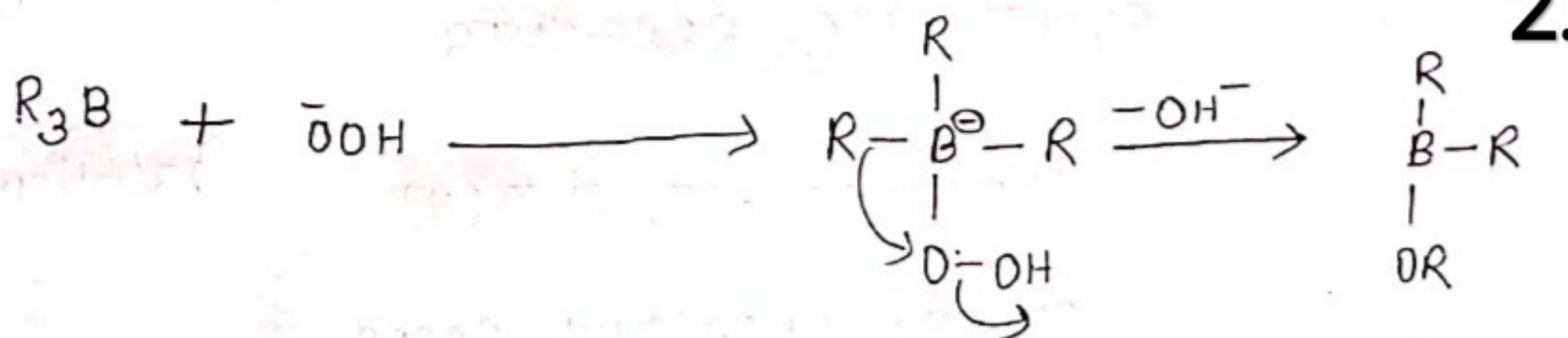


- * The mechanism of oxidation involves initial attack of HOO^- ion to boron, followed by migration of alkyl group from boron to oxygen.

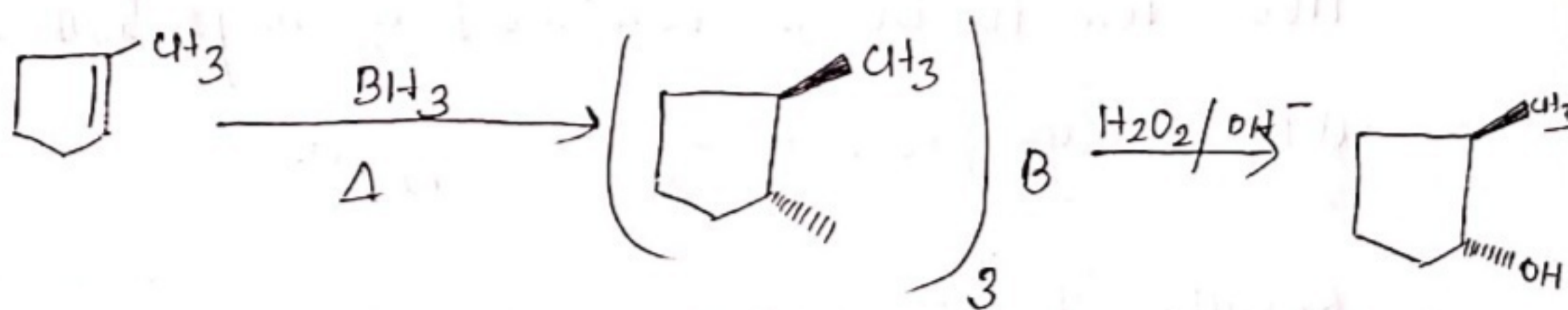
Resulting borate ester liberates alcohol on hydrolysis



2.

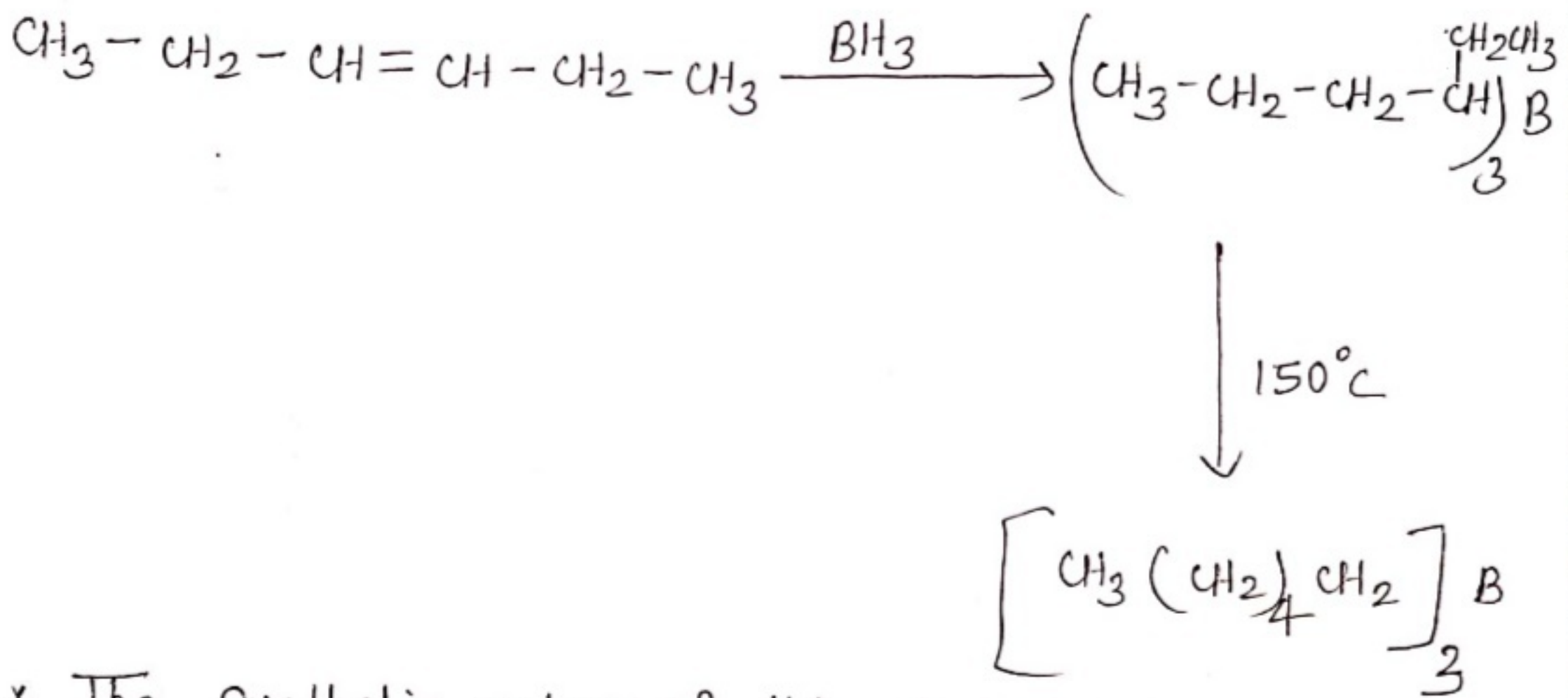


* The transformation of alkene to alcohol proceeds with complete retention of configuration at boron bearing carbon.

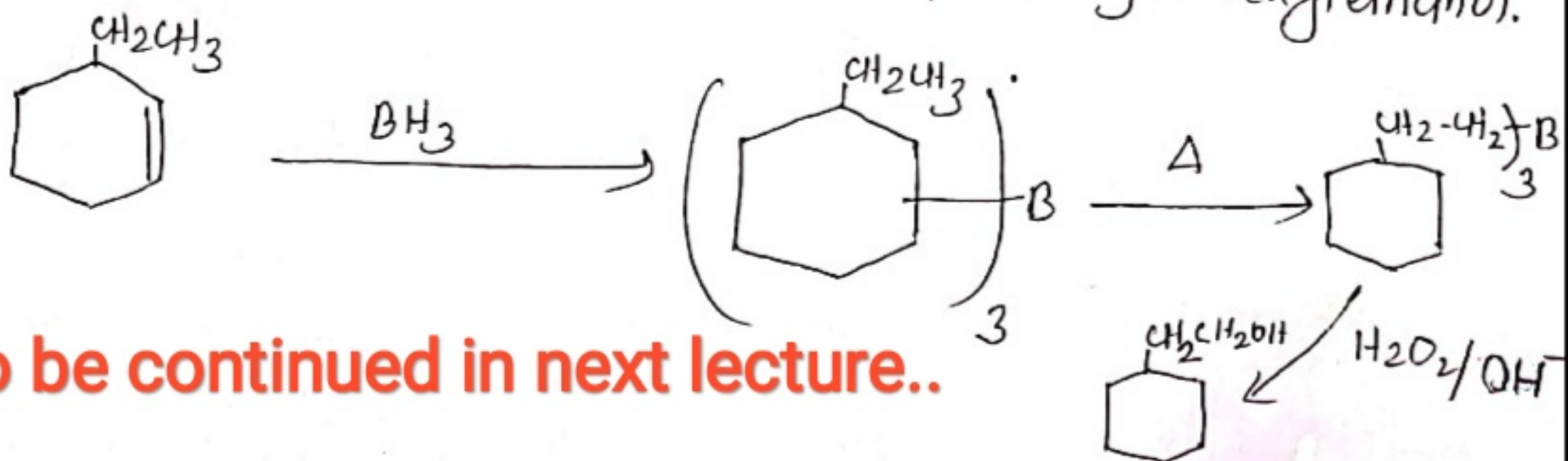


b. Isomerisation of Organoboranes

* Organoboranes undergo isomerisation on heating at moderate temp. ($\sim 150^\circ\text{C}$) to yield products which have the boron atom at the least hindered position of the alkyl chain.



* The synthetic value of this isomerisation is evident from the following example in which internal alkene, 3-ethyl-1-cyclohexene is converted to a 1° alcohol, 2-cyclohexylethanol.



To be continued in next lecture..