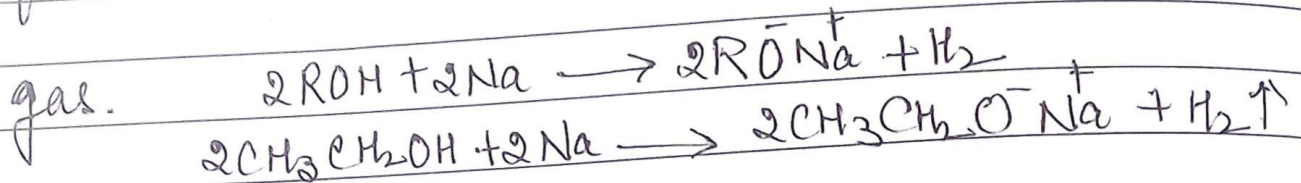
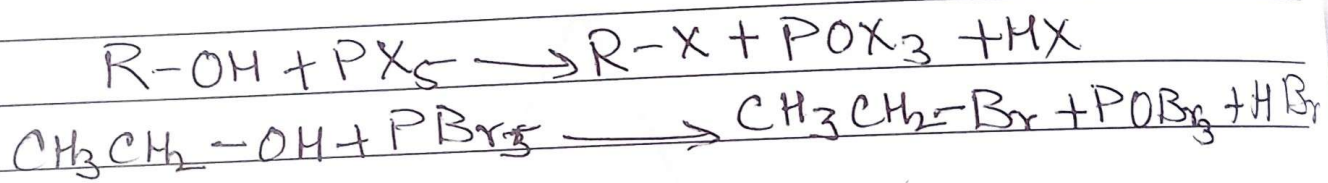


DATE: Chemical reactions of alcohol —!

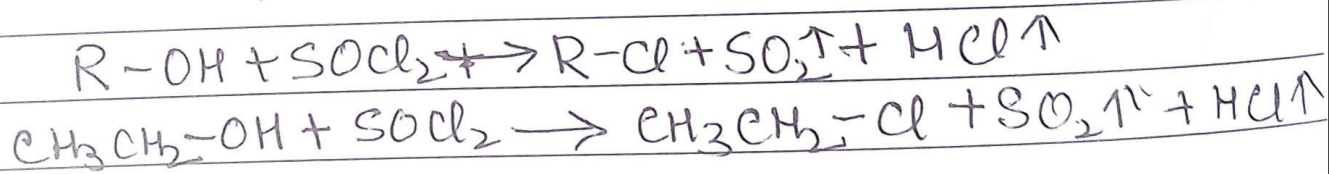
1. Alcohol react with Sodium and Potassium to form alkoxides with the liberation of hydrogen gas.



2. Reaction with Phosphorous Halide \rightarrow Alcohols reacts with phosphorous pentahalide (PX_5)



3. Reaction with Thionyl chloride — Alcohols reacts with thionyl chloride ($SOCl_2$) to form alkyl chloride

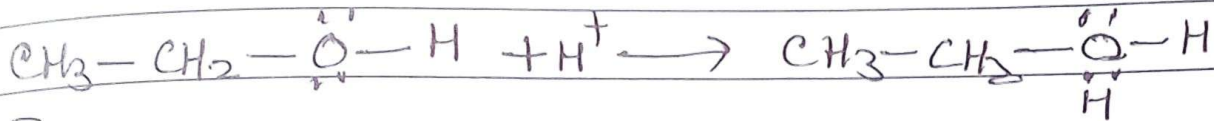


4. Reaction with Hydrogen halide \rightarrow Alcohols reacts hydrogen halide (HX) to form the corresponding alkyl halide.



Mechanism

DATE: 30 Protonation of ethyl alcohol.

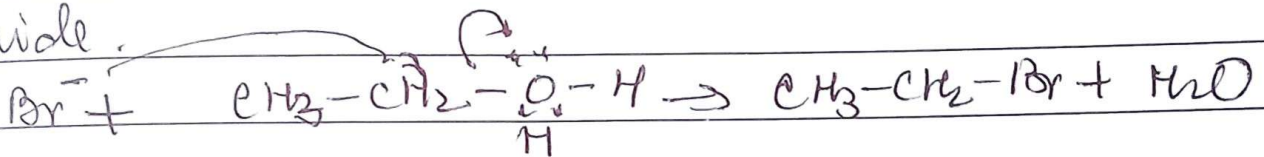


Step II -

Nucleophile (Br^-) attacks the carbon holding

the protonated $-\text{OH}$ group to form ethyl

bromide.



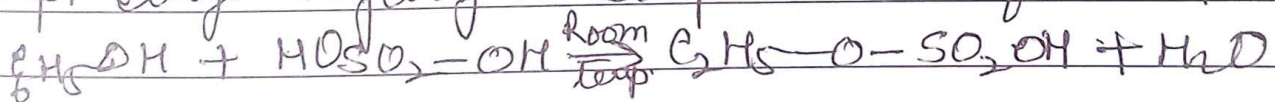
5. Reaction with nitric acid - form alkyl nitrate



6. Reaction with Sulphuric acid \rightarrow

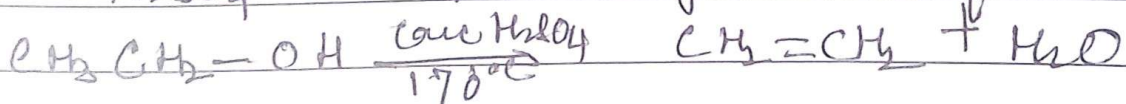
(i) when ethyl alcohol reacts with H_2SO_4 at room

temp, ethyl hydrogen sulphate is formed



(ii) Dehydration of alcohol to alkene \rightarrow treated

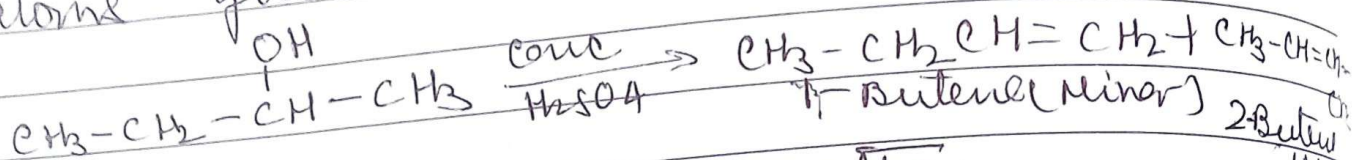
with conc H_2SO_4 at 170°C ethylene is formed.



DATE: Dehydration of Secondary and Tertiary

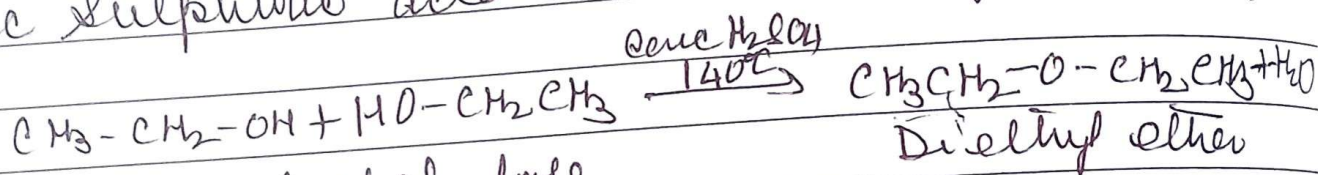
alcohol containing four or more carbon

atoms gives a mixture of two alkenes.

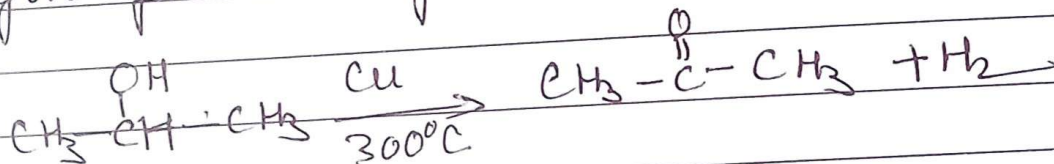


Dehydration of alcohol to ether →
When excess of ethyl alcohol is treated with

conc sulphuric acid at 140°C diethyl ether is found.

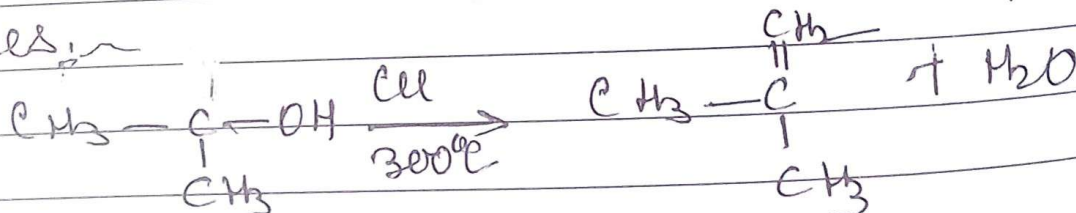


Secondary alcohol lose hydrogen and yield ketone.



Tertiary alcohol are not dehydrogenated

but lose a molecule of water to give alkenes.



2-Methyl propene.