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UG - Sem - IV

MTC - 6 (T)

Unit - 1

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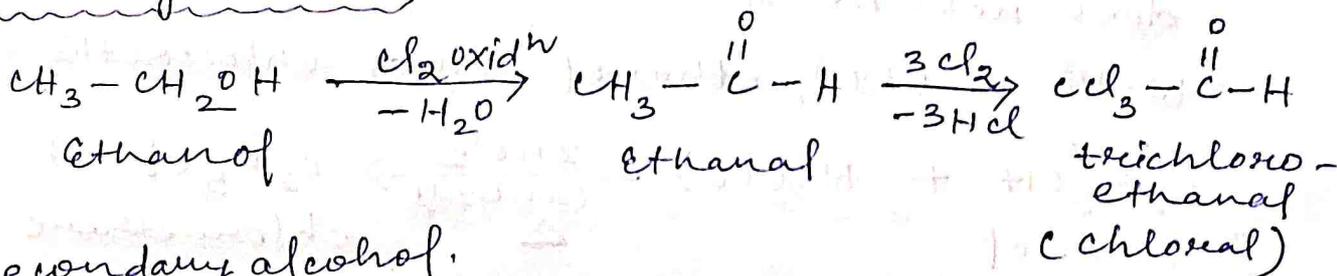
Dept. of Chemistry

Reactions of Alcohols continued . . . .

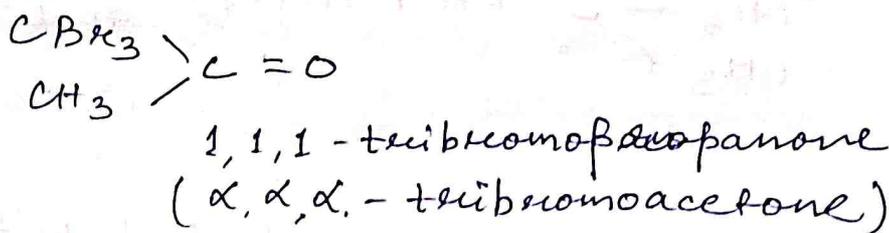
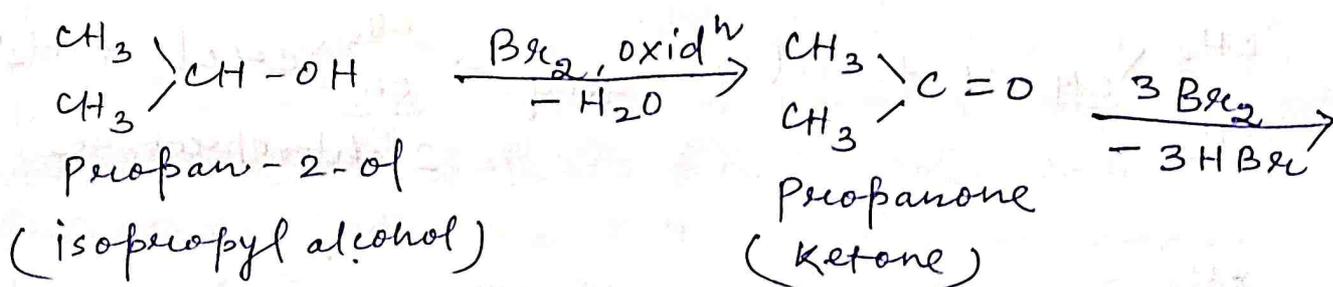
(3) Reaction of Alcohols with Halogens:

Halogens acts as oxidizing agent as well as halogenating agents. Halogens oxidize alcohols to aldehydes or ketones. Aldehyde or ketone so formed then undergoes halogenation.

Primary alcohol:



Secondary alcohol:



Tertiary alcohols are not oxidised by halogens.

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# 'Lucas test': Reaction with Hydrogen Halides :

on treatment with hydrogen halide, an alcohol gives haloalkanes. The order of reactivity is,

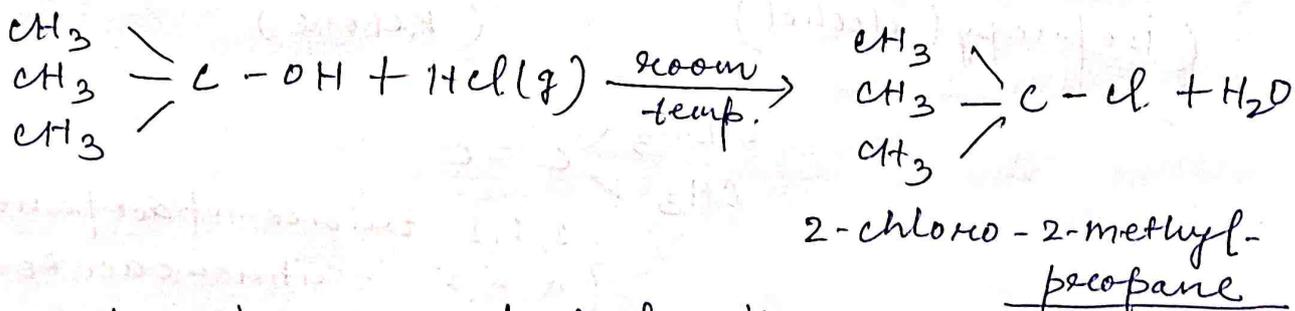
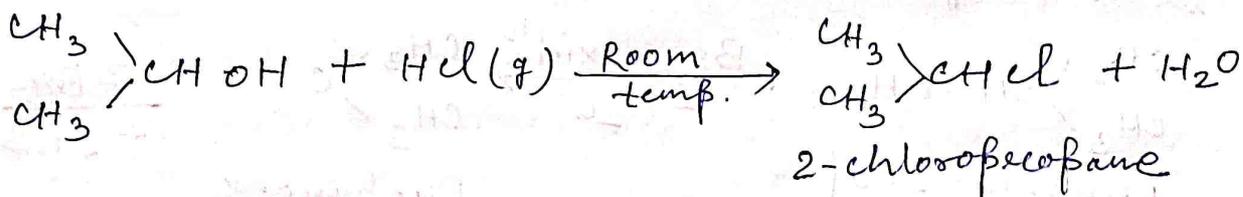
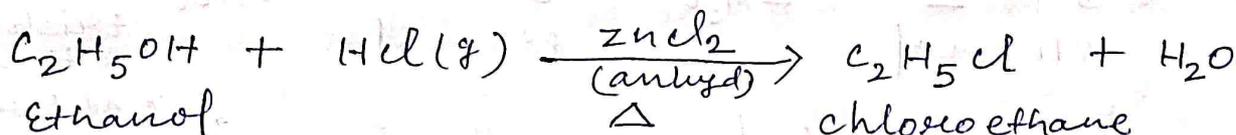
Tertiary alcohol > secondary alcohol > Primary alcohol

and HI > HBr > HCl

The reactivity of HCl is lower than that of HBr and HI, Primary and secondary alcohols react with HCl only in the presence of a catalyst, anhydrous  $ZnCl_2$ .

The reaction of HCl with tertiary alcohol does not need a catalyst.

with HCl(g), ethanol gives chloroethane.



on treating an alcohol with HI in the presence of red phosphorous, an alkane is obtained.

