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CHEM 102

1a Primary Alcohol: In a primary alcohol, the hydroxyl group is attached to a primary [terminal] carbon atom in the molecule. It is characterised by $-CH_2OH$. Examples,

i) Ethanol - CH_3CH_2OH

ii) Methanol - CH_3OH .

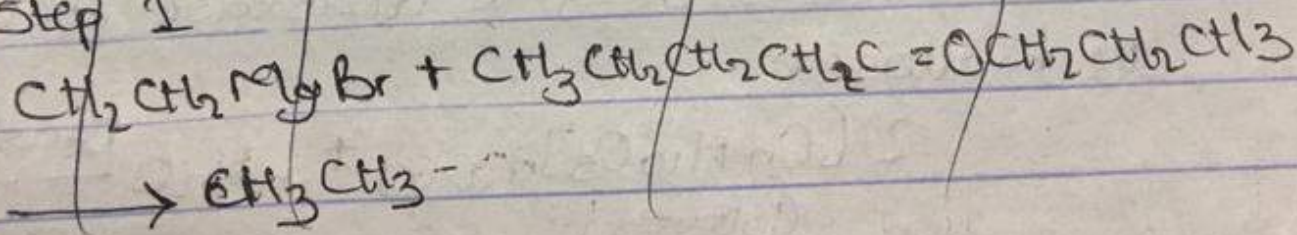
ii) Secondary Alcohol: In a secondary alcohol the OH group is on a secondary carbon atom. It is characterised by $-CHOH-$. Examples:

i) $CH_3CH(OH)CH_3$ - Propan-2-ol.

ii) $[CH_3]_2C-OH$ - 2-methylpropan-2-ol

2. In the Grignard synthesis of Alcohols, react a named Grignard reagent with $CH_3CH_2CH_2CH_2C=OCH_2CH_2CH_3$. Show the reaction steps?

Step 1

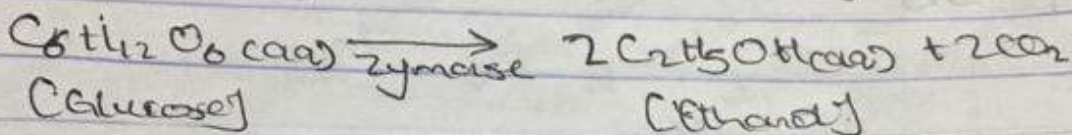
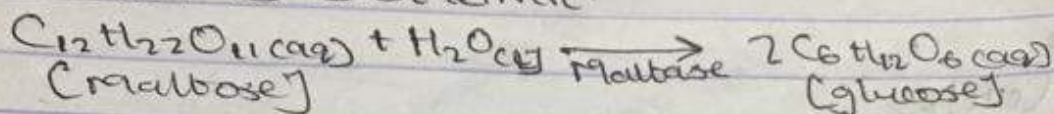


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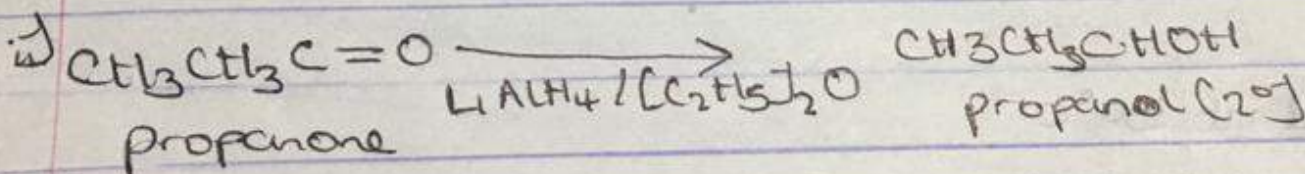
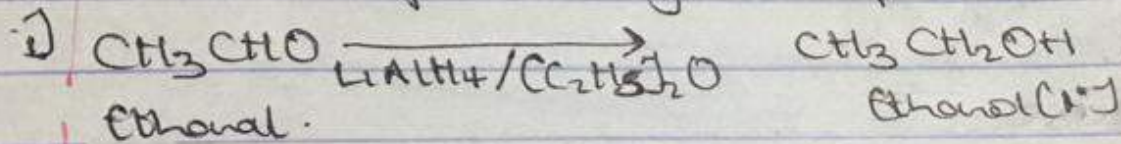
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- iii) Yeast containing enzymes maltase and zymase is added to mixture, and kept at room temperature [about 27°C] for about three (3) days. During this period, enzyme zymase [4] works. The reaction is exothermic.



The mixture is distilled, to obtain 95% ethanol that boils at 78°C.

iv) Reduction of carbonyl compounds



Alkanals are reduced to the corresponding primary alkanols by reducing agents such as lithium tetrahydridoaluminate [4], LiAlH_4 that provides the nascent hydrogen, [H], which causes reduction: [refer to (i)]

