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① Alcohols are very important organic compounds. Discuss briefly their classification and give one example each.

### CLASSIFICATION OF ALCOHOLS

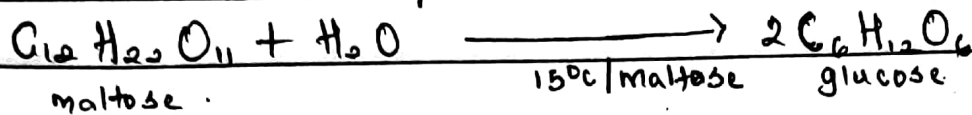
① This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the numbers of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is called a primary alcohol ( $1^\circ$ ). If it is one hydrogen atom, it is called secondary alcohol ( $2^\circ$ ) and if no hydrogen atom is attached to the carbon atom bearing the hydroxyl group, it is called a tertiary alcohol ( $3^\circ$ ). Examples are  $\text{CH}_3\text{OH}$  methanol ( $1^\circ$ ),  $\text{CH}_3\text{CH}_2\text{OH}$  ethanol ( $1^\circ$ ),  $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$  propan-2-ol ( $2^\circ$ ),  $(\text{CH}_3)_3\text{C}-\text{OH}$  2-methylpropan-2-ol ( $3^\circ$ )

② This is based on the number of hydroxyl group they possess. Monohydric alcohols have one hydroxyl group present in the alcohol structure. Dihydric alcohols are also called glycols have two hydroxyl groups present in the alcohol structure while trihydric alcohols or triols have three hydroxyl groups present in the structure of the alcohol. Polyhydric alcohols or polyols

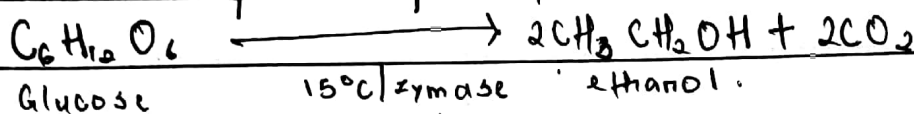
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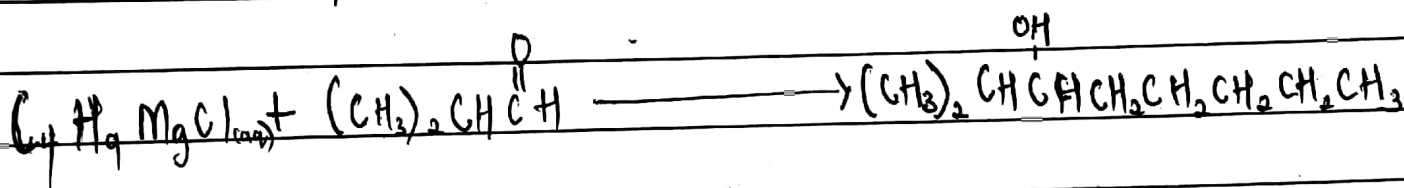
The maltose is broken down into glucose on addition of yeast which contains the enzyme maltase and at a temperature of 15°C.



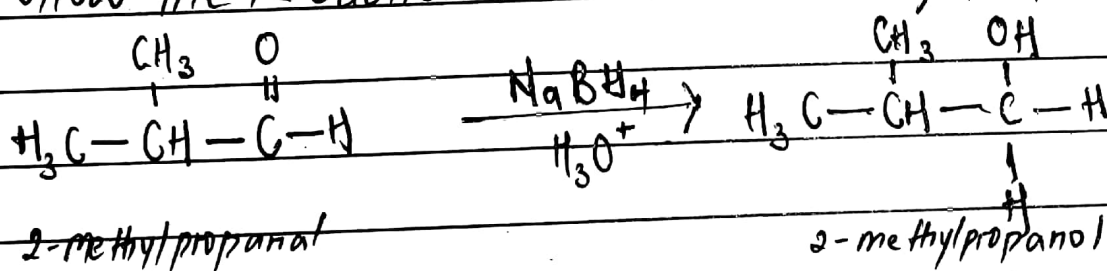
The glucose at constant temperature of 15°C is then converted into alcohol by the enzyme Zymase contained also in yeast.



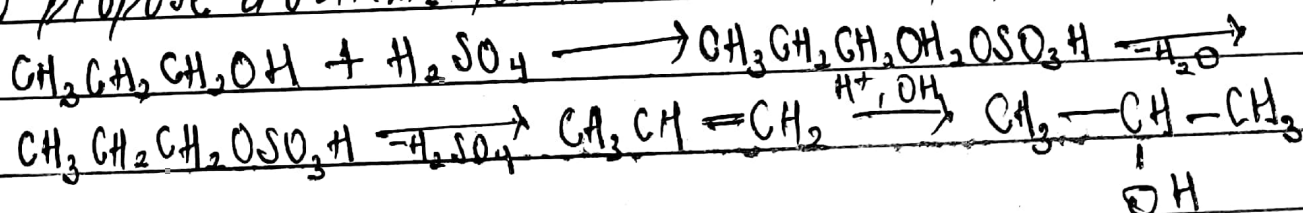
④ Show the reaction between 2-methylpropanal and butylmagnesium chloride  
HINT GRIGNARD SYNTHESIS.



⑤ Show the reduction reaction of 2-methylpropanal



⑧ propose a scheme for the conversion of propan-1-ol to propan-2-ol



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