

ONUDAM ADAMMA JANET

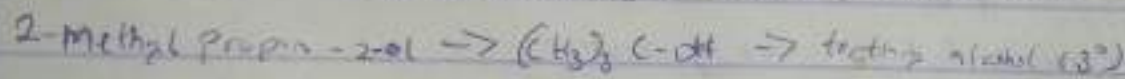
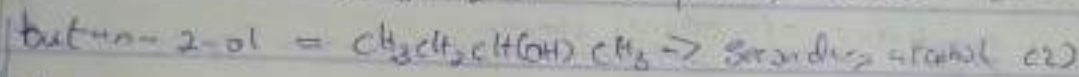
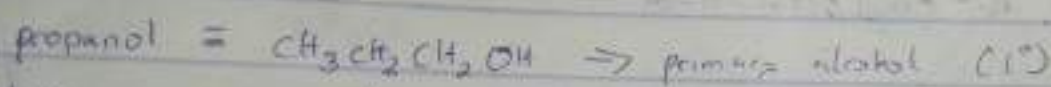
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Chem 102

1 Discuss the two major classifications of Alcohols - give two examples each for each class

a) The first classification is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group; that is if the number of hydrogen atoms attached to the carbon having the hydroxyl group is two or three, it is a primary alcohol or alcohol. If the number of hydrogen atoms attached to the carbon atom having the hydroxyl group is one, it is said to be a secondary alcohol (alcohol) then if there is no hydrogen atom attached to the carbon having the hydroxyl group, it is a tertiary alcohol.

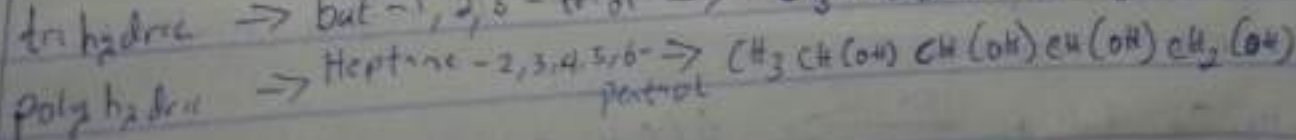
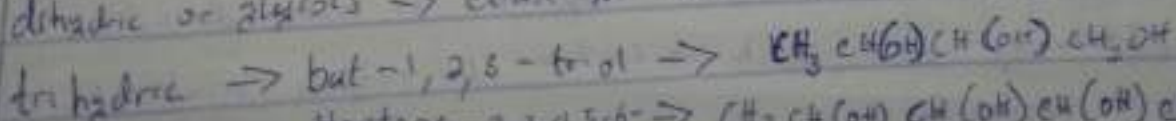
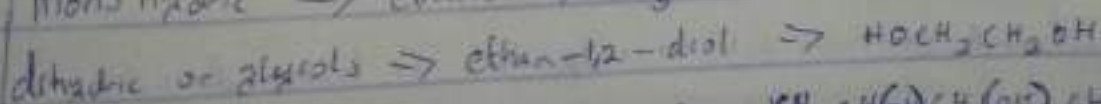
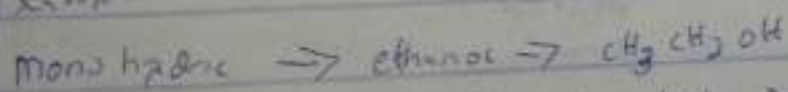
for example



b) The second classification is based on the number of hydroxyl groups that is present in the alcohol structure. It can be monohydric that is contain only one hydroxyl group in an alcohol structure. It can be dihydric that is it contains two hydroxyl groups in an alcohol structure. It can be trihydric that is it can contain three hydroxyl groups in an alcohol structure.

Polyhydric, they possess more than three hydroxyl groups in a compound.

Example

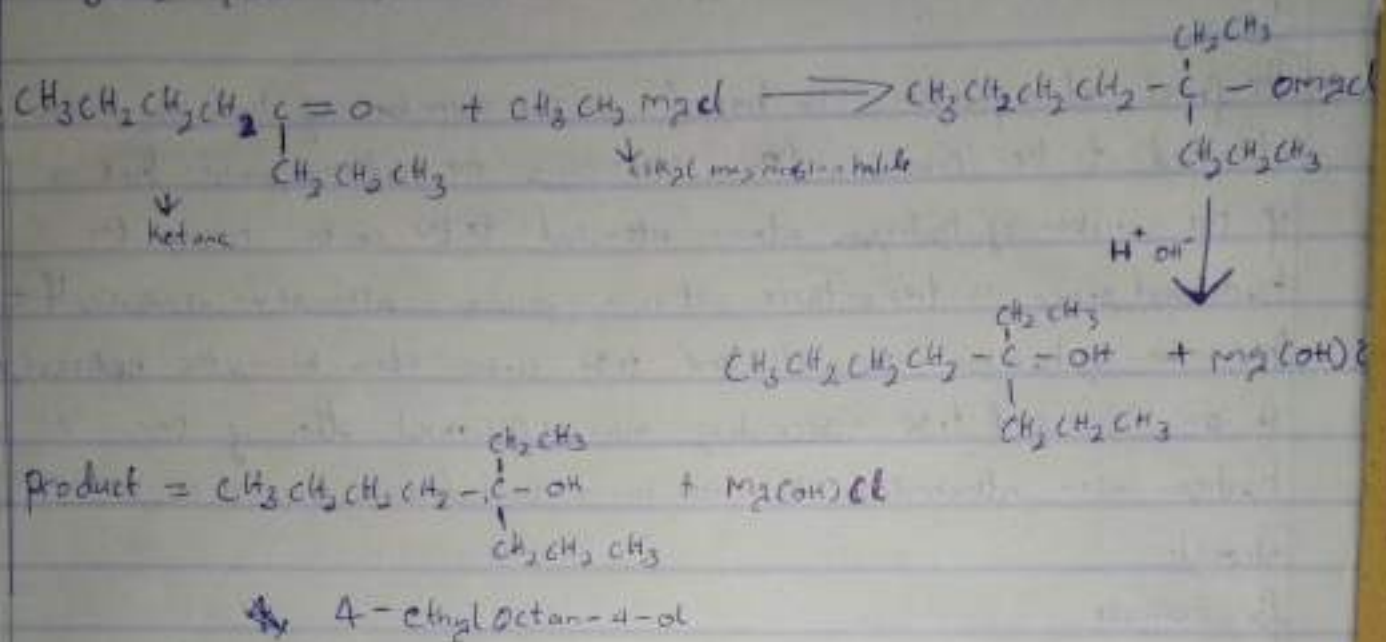


② In the Grignard synthesis of Alkanol, react a named Grignard reagent

with $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{C}=\text{OCH}_2\text{CH}_2\text{CH}_3$ show the steps

$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{C}=\text{OCH}_2\text{CH}_2\text{CH}_3 \Rightarrow$ ketone \rightarrow octan-4-ol

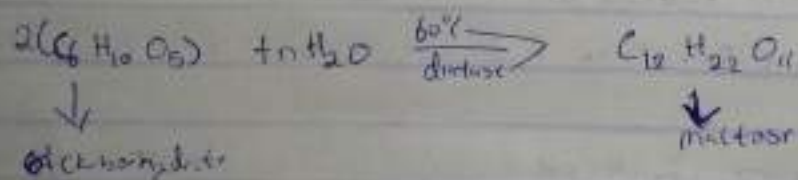
$\text{CH}_3\text{CH}_2\text{MgCl} \Rightarrow$ the Grignard reagent \rightarrow ethyl magnesium chloride



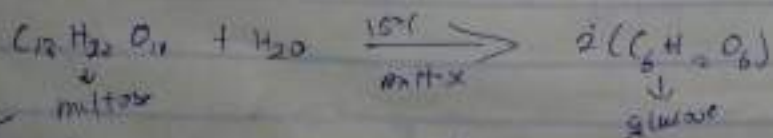
③ Discuss the industrial manufacture of ethanol showing necessary enzymes and temperatures of reaction and

Carbohydrate for example starch, are the natural compounds that can be made to yield ethanol by the biological process of fermentation.

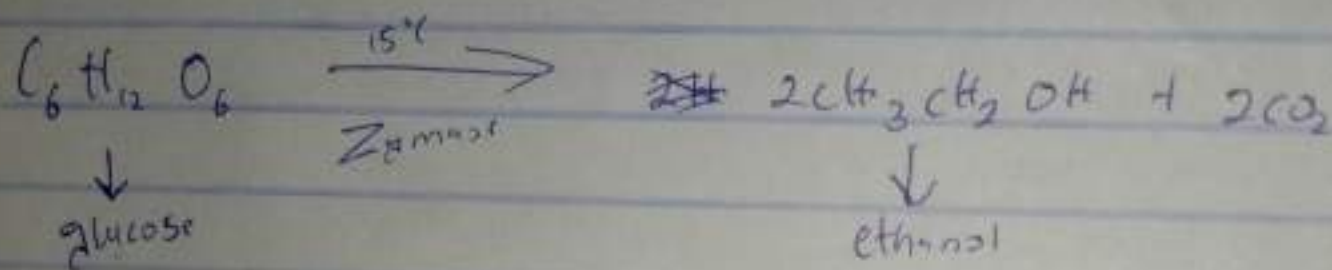
On warming starch containing materials like rice, potatoes, cereals with malt to 60°C for a specific period of time, are converted into maltose by the enzyme diastase contained in the malt.



The maltose dissolved, obviously not the endproduct is broken down to glucose by addition of yeast which is contain the enzyme maltase, and at 15°C



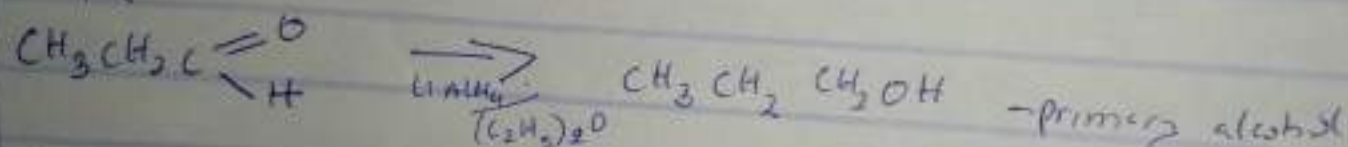
The glucose is now converted by the enzyme Zymase under constant pressure of 15°C



Determine the product obtained in the reduction of Alkynes and alkenals. Use specific example for each and show the equation of reaction

Aldehyde reduced \rightarrow Primary alcohol

Example



Ketone reduced \rightarrow secondary alcohol

Example

