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Dept: Pharmacy

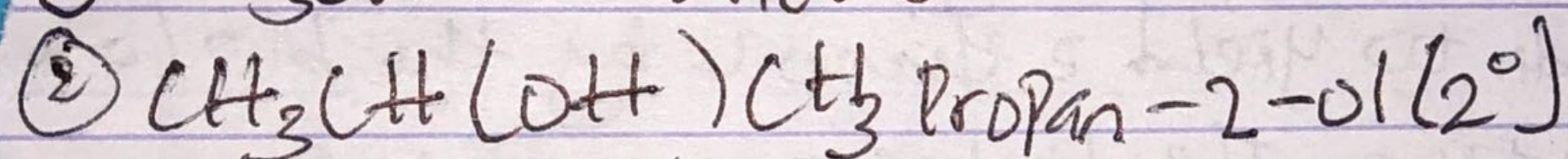
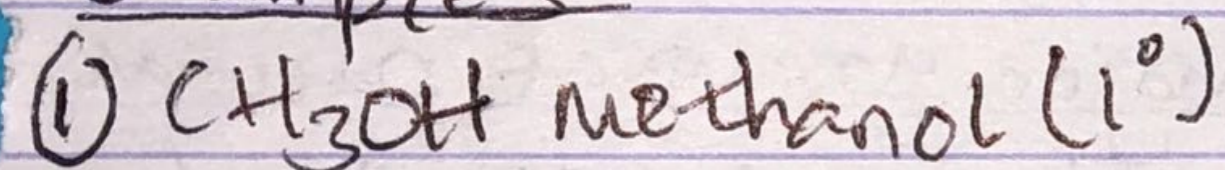
Uduvobolo's Copy

## Chemistry 102 Assignment

### 1) Classification of Alcohols

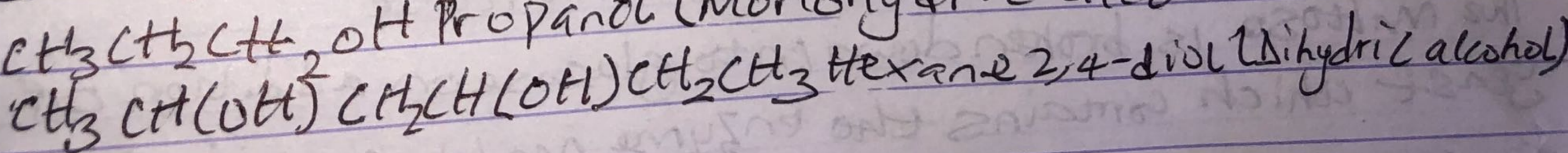
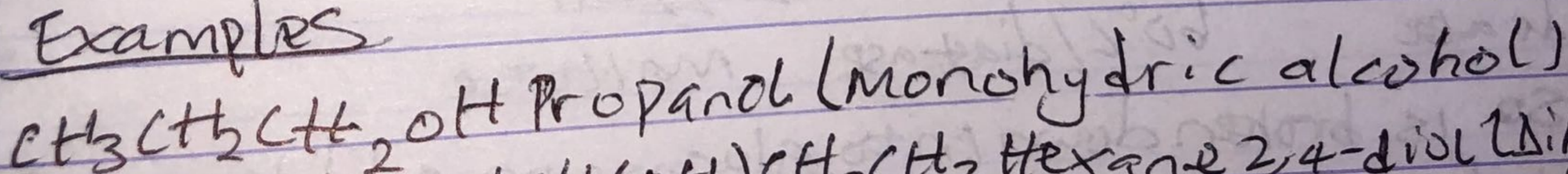
a) This is based on the number of hydrogen atom attached to the carbon atom containing the hydroxyl group. If the numbers of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is called a primary alcohol ( $1^\circ$ ). If it is one hydrogen atom, it is called secondary alcohol ( $2^\circ$ ) and if no hydrogen atom is attached to the carbon atom bearing the hydroxyl group, it is called a tertiary alcohol ( $3^\circ$ )

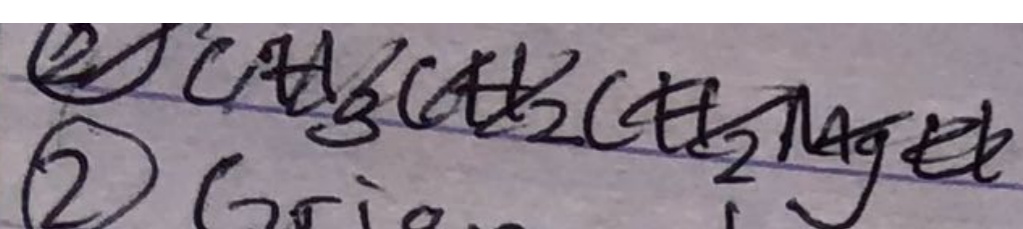
#### Examples



b) This is based on the number of hydroxyl groups they possess. Monohydric alcohols have one hydroxyl group present in the alcohol structure. Dihydric alcohols are also called Glycols, <sup>they</sup> have two hydroxyl groups present in the alcohol structure while trihydric alcohols or triols have three hydroxyl groups present in the structure of the polyhydric alcohols or polyols have more than three hydroxyl groups.

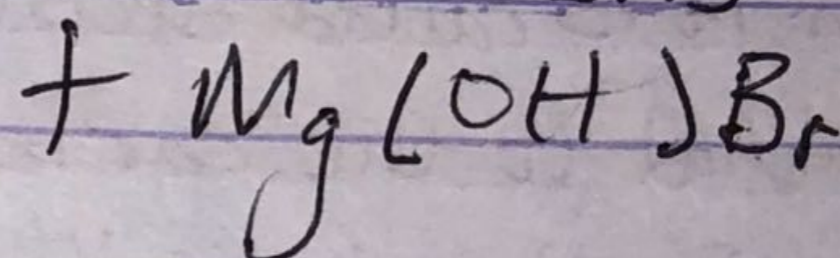
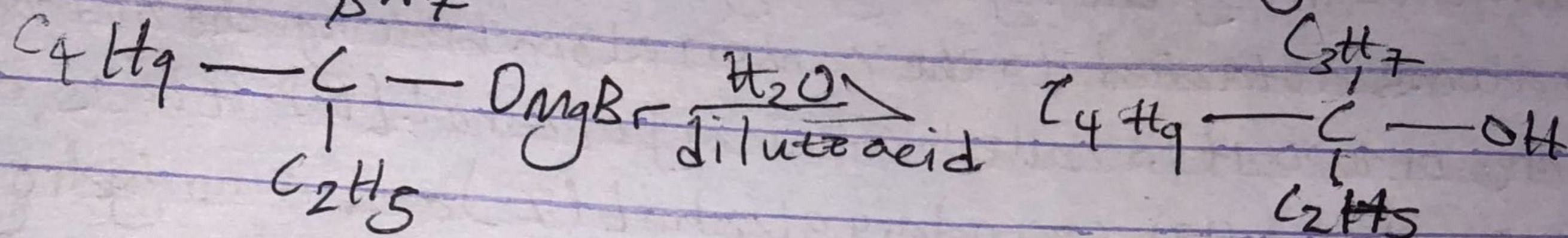
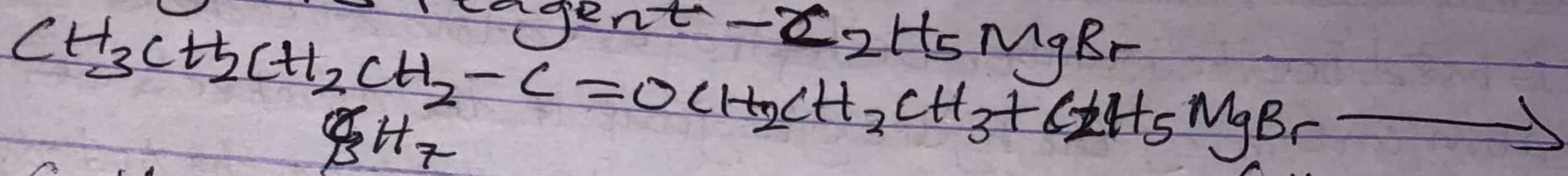
#### Examples





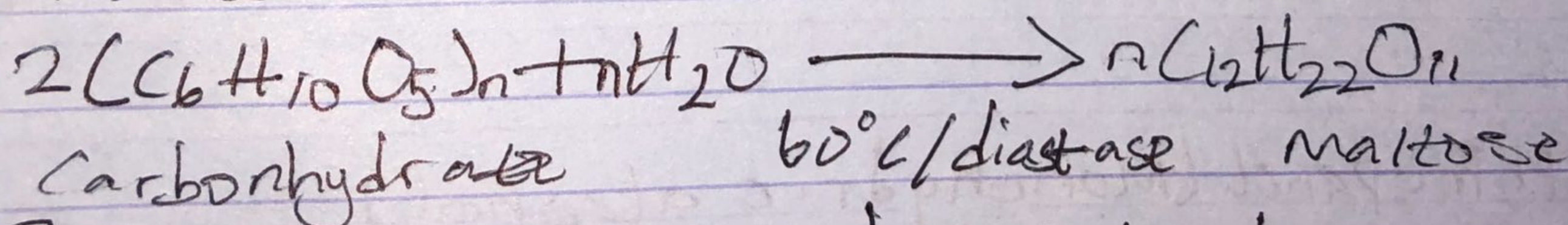
② Grignard synthesis of Alkanols

Grignard reagent -  $\text{C}_2\text{H}_5\text{MgBr}$

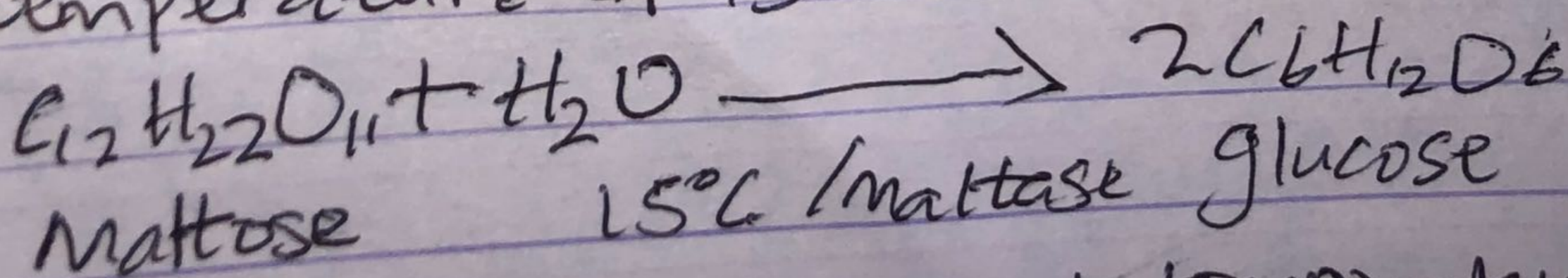


③ Industrial Manufacturer of Ethanol

Carbohydrates such as starch are major group of natural compounds that can be made to yield ethanol by the biological process of fermentation. The biological catalysts, enzymes found in yeast break down the carbohydrate molecules into ethanol to give a yield of 95%. The starch containing materials include molasses, potatoes, cereals, rice and warming with malt to  $60^\circ\text{C}$  for a specific period of time are converted into maltose by the enzyme diastase contained in the malt.

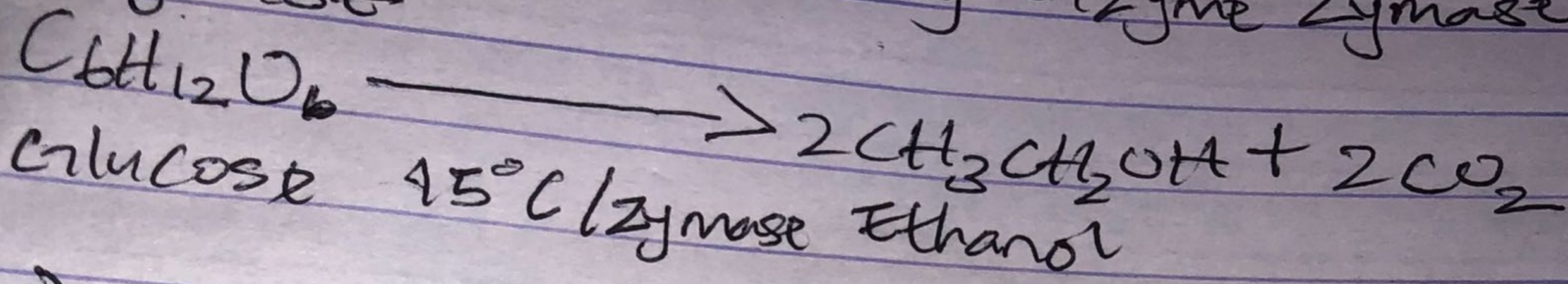


The maltose is broken down into glucose on addition of yeast which contains the enzyme maltase and at a temperature of  $15^\circ\text{C}$

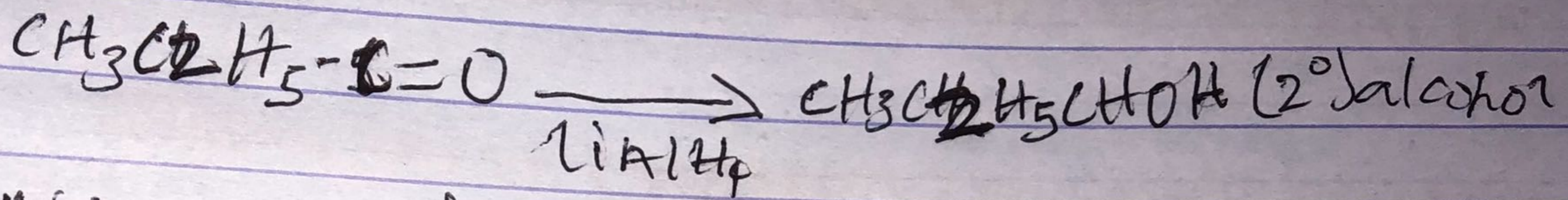


The glucose at constant temperature of  $15^\circ\text{C}$  is then

converted into alcohol by enzyme Zymase contained also  
in yeast



4) Alkanone. Reduction of alkanone gives secondary alkanols



Alkanals. Reduction of alkanals gives primary alkanols

