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Pharmacy

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CHM 102

### Assignment

① - Classification based on the number of hydrogen atoms attached to the carbon ~~compound~~ <sup>atom</sup> containing the OH group.

① If 2 or 3 hydrogen atoms are attached to the carbon atom bearing the OH group, it is called a primary alcohol ( $1^\circ$ ) eg Ethanol

② If one hydrogen atom is attached to the carbon atom it is called a secondary alcohol ( $2^\circ$ ) eg Propan-2-ol

③ If no hydrogen atom is attached to the carbon atom it is a tertiary alcohol e.g 2-methylpropan-2-ol

- Classification based on the number of hydroxyl groups <sup>(OH)</sup> present in the compound

① Monohydric: They possess one hydroxyl group (OH) eg butan-1-ol

② Dihydric: They possess two hydroxyl groups e.g butan-1,2-diol  
They are also known as glycols

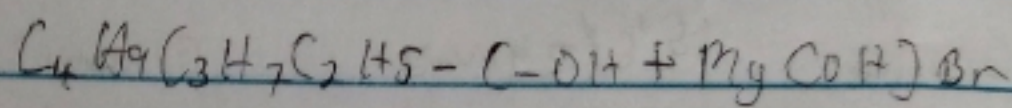
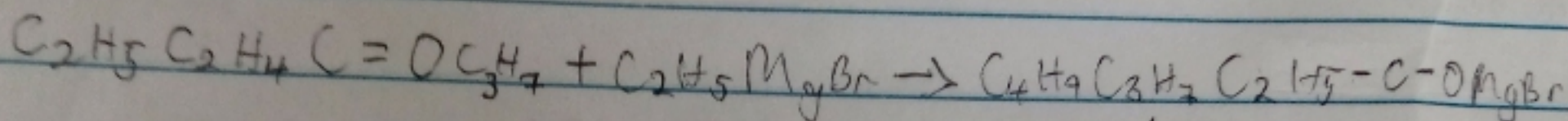
③ Trihydric: They possess three hydroxyl groups e.g glycerol

④ Polyhydric: They possess more than three hydroxyl groups

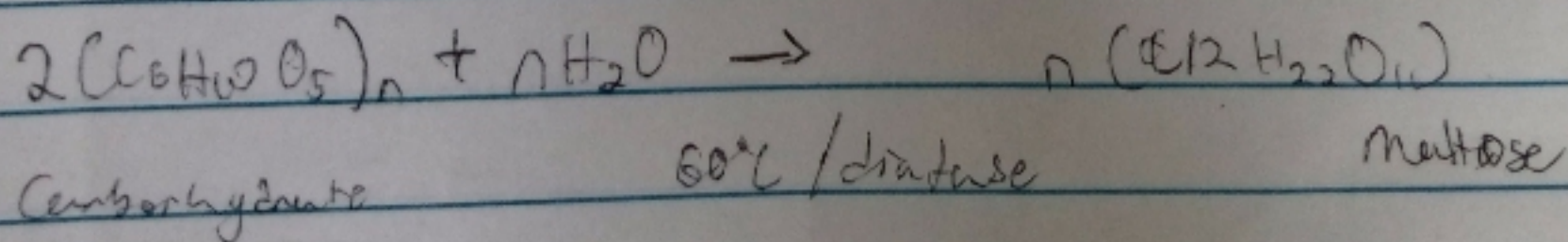
⇒ Pentan-1,2,3,4-petrol

② Grignard synthesis of Alkanols  
Grignard reagent -  $C_2H_5MgBr$

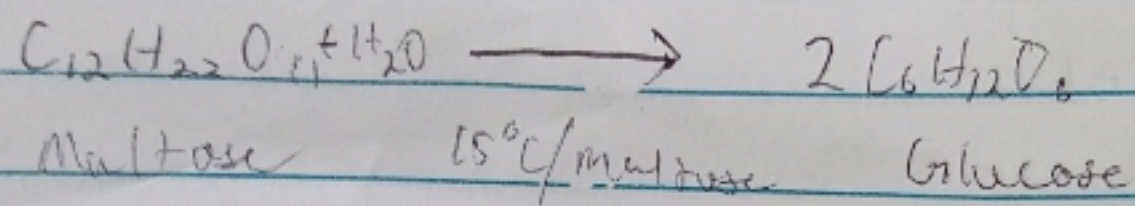
~~$C_2H_5$~~   ~~$C_2H_5$~~



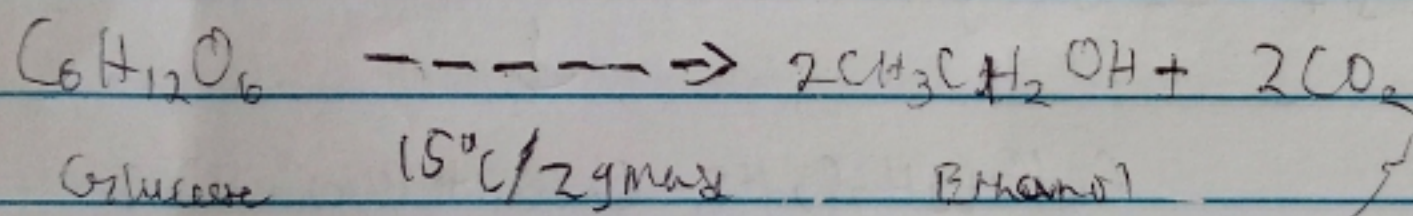
③ Carbohydrates such as starch are a major group of natural compounds that ~~can~~ be made to yield ethanol by the biological process of ~~fer~~ fermentation. The biological catalysts, enzymes found in yeast breakdown the carbohydrate molecules into ethanol to give a yield of 95%. On warming starch with malt to  $60^\circ$  for a specific period of time are converted into maltose by the enzyme diastase contained in the malt.



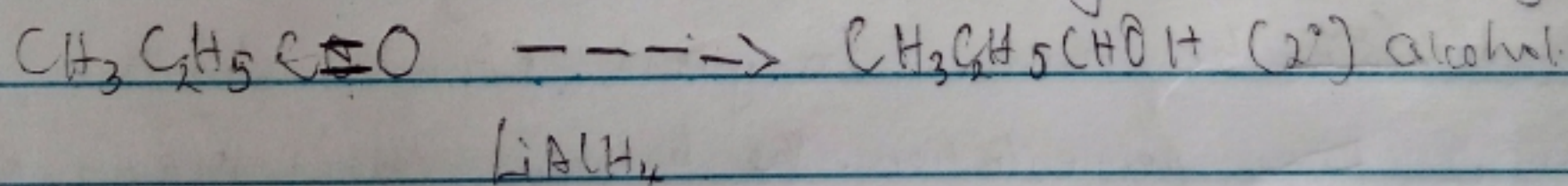
The maltose is broken down into glucose. On addition of yeast which contains the enzyme maltase at temperature of  $35^\circ$



The glucose at constant temperature of  $15^\circ\text{C}$  is then converted into alcohol by the enzyme Zymase also contained in yeast



④ Alkanones: Reduction of alkanones gives secondary alkanols



Alkanals: Reduction of alkanals gives primary alkanols

