

Name! JUANBO RICHARD TATTUNON-ENGUNYEO RPT
Dept! NURSING
Matr no! LT/1911502/068
CHEM 102 Assignment

1) Classification of alcohol

a) This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the number of hydrogen atoms are attached to the carbon atom bearing the hydroxyl group are three or two, it is called secondary alcohol (2°) and if hydrogen atoms attached to the carbon atom bearing the hydroxyl group, it is called a tertiary alcohol (3°)

eg are

$\text{CH}_3\text{CH}_2\text{CH}_2\text{OH} \rightarrow \text{propan-1-ol } (1^\circ)$

b) This is based on the number of hydroxyl groups present. Monohydric alcohol have one hydroxyl group present in the alcohol structure. Dihydric alcohols are also called glycols, they have two hydroxyl groups present in the alcohol structure while trihydric alcohols or fruits have three hydroxyl groups present in the structure of the alcohols.

Polyhydric alcohol or polyols have more than three hydroxyl groups eg

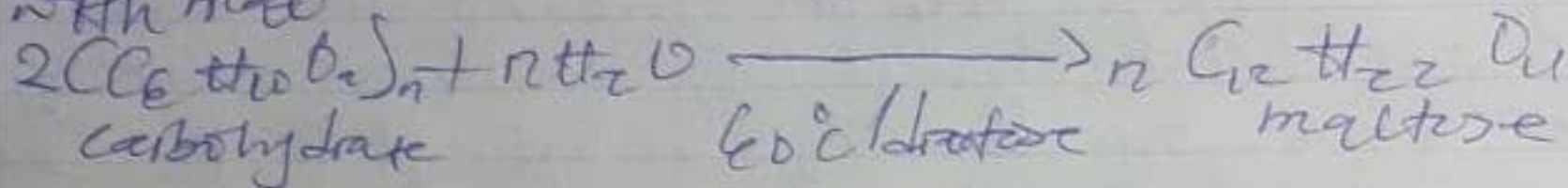
$\text{HOCH}_2\text{CH}_2\text{OH} \rightarrow \text{Dihydric alcohol}$

2) Solubility of alcohol in water: lower alcohols with up to three carbon atoms in their molecules are soluble in water because these lower alcohols can form hydrogen bonds with water molecules. The water solubility of alcohols decrease with increasing relative molecular mass. All monohydric alcohols are soluble in organic solvents. The solubility of simple alcohols and polyhydric alcohol is largely due to the ability to form hydrogen bonds with water molecules.

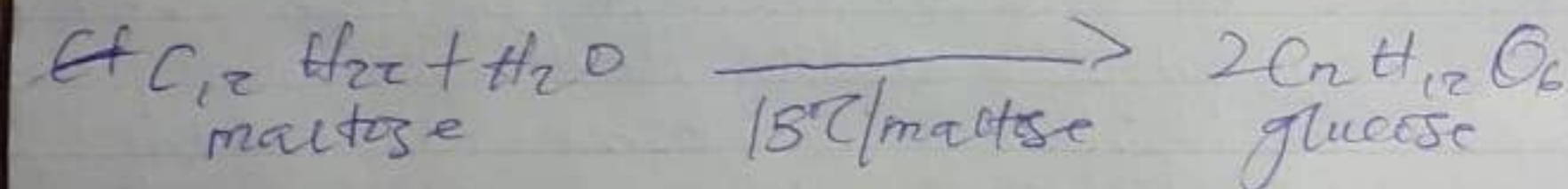
17/11/2008

2) Production of ethanol

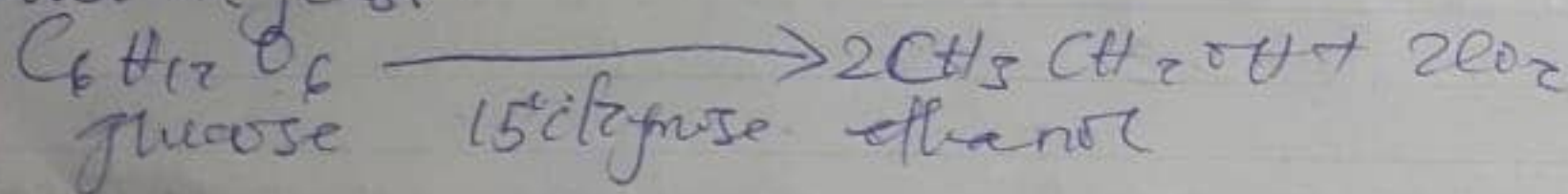
Carbohydrate such as starch are major group of natural compounds that can be made to yield ethanol by the biological process of fermentation. The biological analysis found in yeast, breakdown the carbohydrate molecules into ethanol, a yield of 75%. The starch containing materials includes molasses, potatoes, cereals and washing with malt to boil for a specific period of time are converted with maltose by the enzyme diastase contained with malt.



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

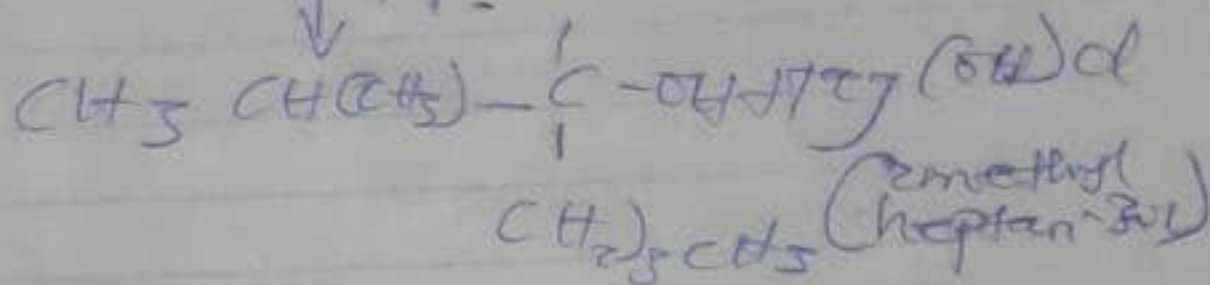
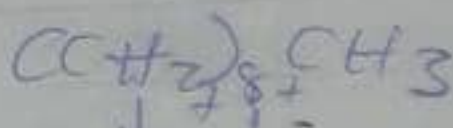
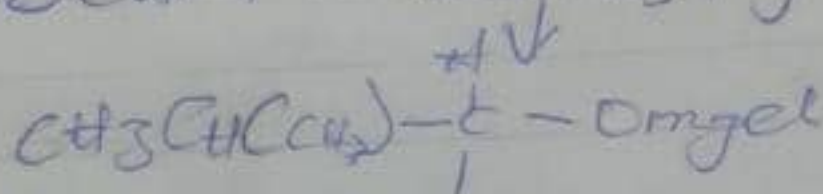
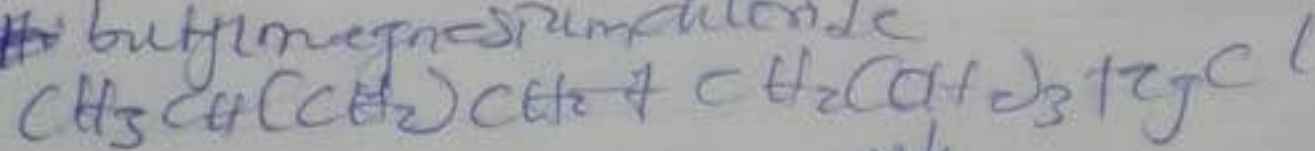


The glucose at constant temperature of $15^\circ C$ is then converted into alcohol by the enzyme. Zymase contained also in yeast.



19/11/2018

Reaction between 2 methyl propanal and
~~butyl~~ butylmagnesium chloride



Reduction of 2-methyl propanal

