

Name: Anochirionye Oreofe Ijeoma

Course: CHM 102

Dept: Nursing

Matric No: 19/0711502/025

### Assignment (New)

1) (a) Alcohols are classified based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl (OH) group. Eg  $\text{CH}_3\text{OH}$  Methanol.

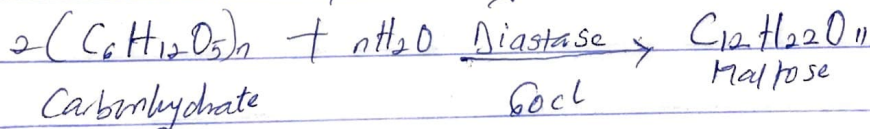
(b) Another classification of alcohol is based on the number of hydroxyl (OH) groups they possess. Eg  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$  propanol.

2) 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.

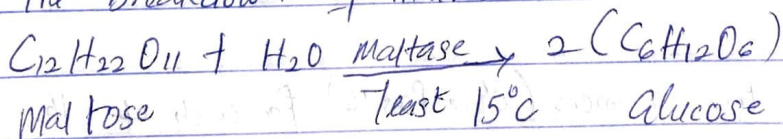
\* Solubility of alcohol in organic solvent; All monohydric alcohols having one hydroxyl (OH) group present in the alcohol structure are soluble in organic solvents. The solubility of simple alcohols and polyhydric alcohols is largely due to their ability to form hydrogen bonds with water molecules.

### 3) Steps in the Industrial Manufacture of Ethanol

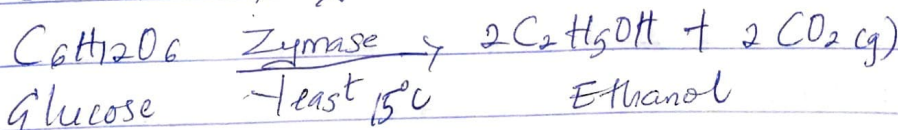
→ The breakdown of carbohydrate



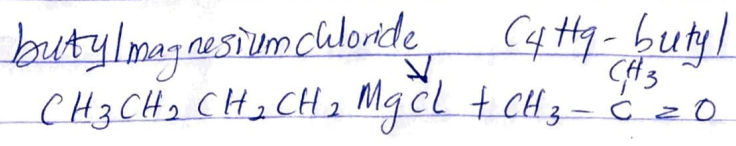
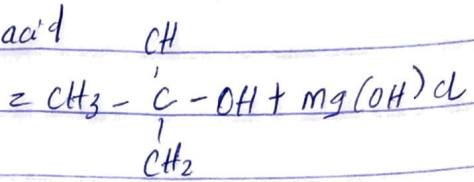
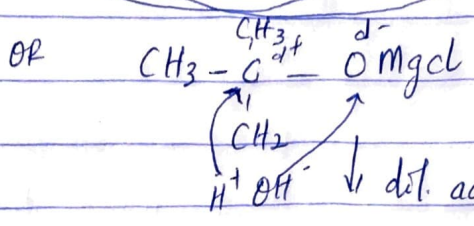
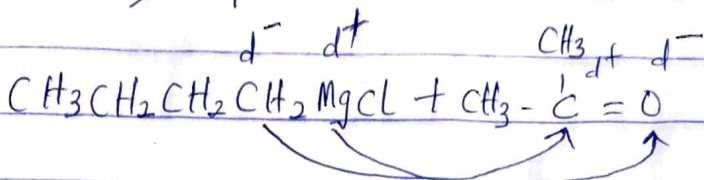
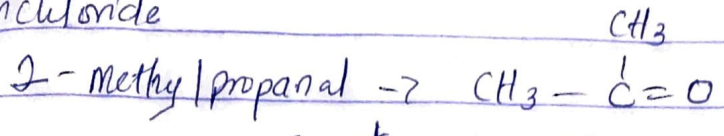
→ The breakdown of maltose



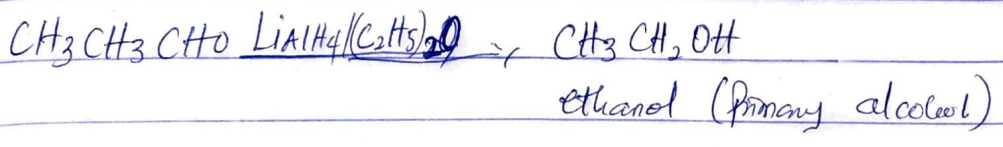
→ Conversion of glucose to ethanol



4) Show the reaction between 2-methylpropanal and butylmagnesium chloride



7) Show the reduction reaction of 2-methylpropanal  
 2-methylpropanal - an aldehyde.



8) Propose a Scheme for the Conversion of Propan-1-ol to Propan-2-ol

