

Oluwole-ojo Oluwagbemi

19/MH501/342

1) Classification based on the number of hydrogen atom attached to the carbon atom bearing the hydroxyl group. If ~~the~~ hydrogen is attached to the carbon atom, it is called primary alcohols, if two is attached it is called secondary alcohols and if ~~three~~ is attached it is called tertiary alcohols.

example ethanol -  $\text{CH}_3\text{CH}_2\text{OH}$

methanol -  $\text{CH}_3\text{OH}$

2) Classification based on the number of hydroxyl group. In this classification there are monohydric, dihydric, trihydric and polyhydric alcohols. Monohydric has one hydroxyl group, Dihydric has two and trihydric has three. Polyhydric contain more than three hydroxyl group.

Examples - Ethane-1,2 diol (Dihydric alcohol)

$\text{OHCH}_2\text{CH}_2\text{OH}$

Butanol -  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$  (Monohydric alcohol)

3) Industrial preparation of ethanol

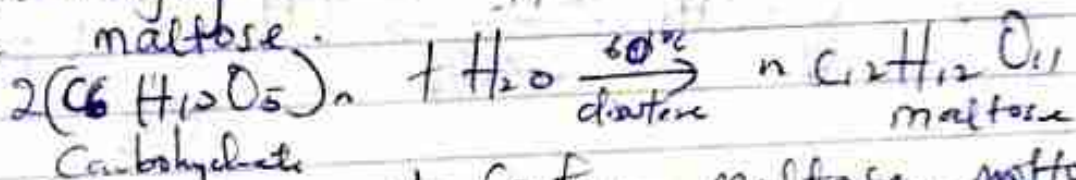
Ethanol can be prepared industrially, by the fermentation of polysaccharides like starche ~~is~~ comprised by enzymes at certain

2) Solubility of alcohols:

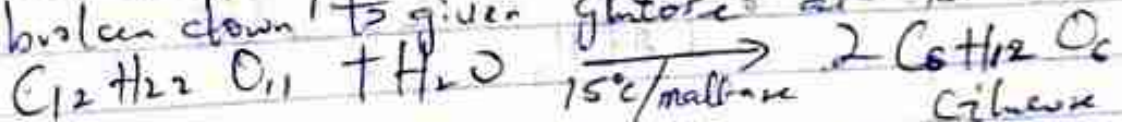
Lower alcohols with up to three carbon atoms in their molecules are soluble in water. This is due to their ability to form hydrogen bond with water molecules. On the other hand, alcohols are more soluble in organic solvents, which is non-polar as the alcohol itself. Solubility increases with increasing molecular mass.

3) Industrial preparation of ethanol:

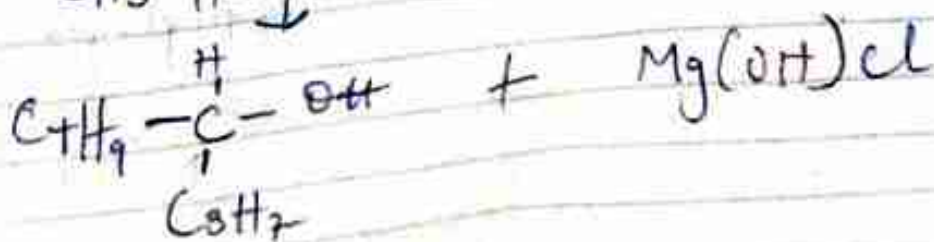
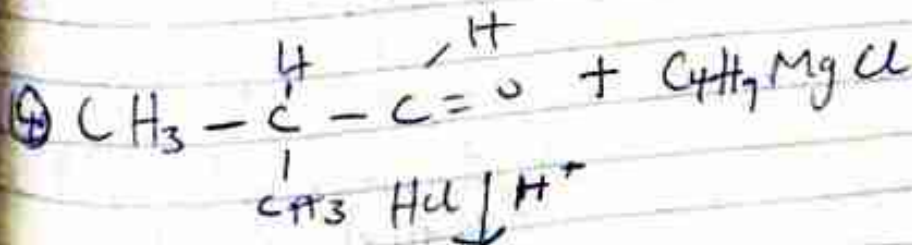
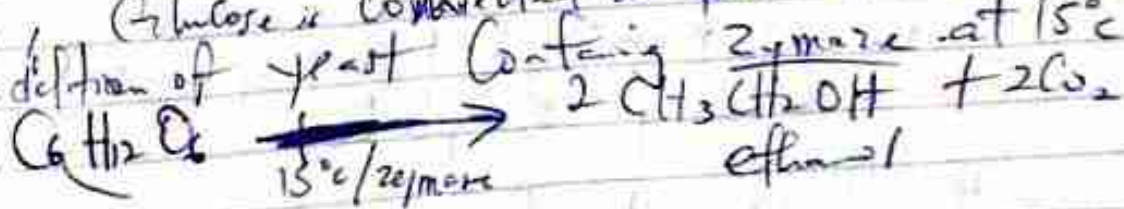
It is prepared by fermenting polysaccharides e.g. Starch using enzymes and at a reduce temperature. Firstly, it is boiled to a temperature of 60°C and malt (containing diastase is added) is added to give maltose.

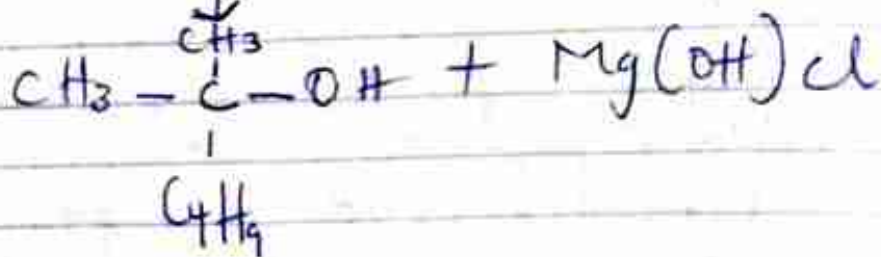
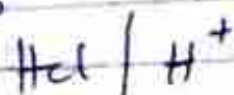
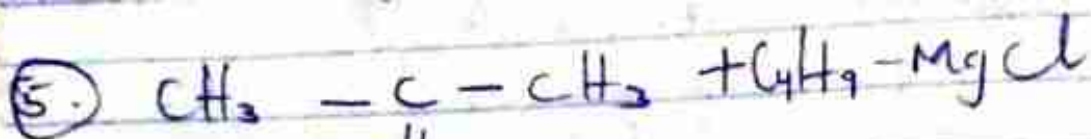


On addition of yeast containing maltase, maltose is broken down to give glucose at 15°C.

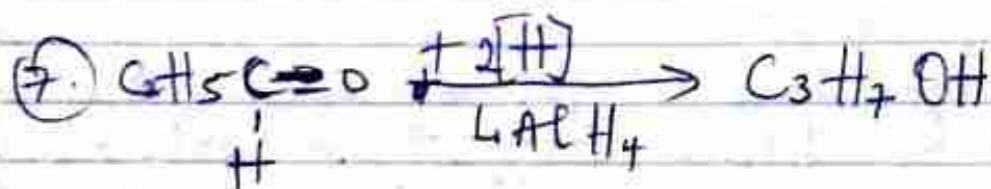
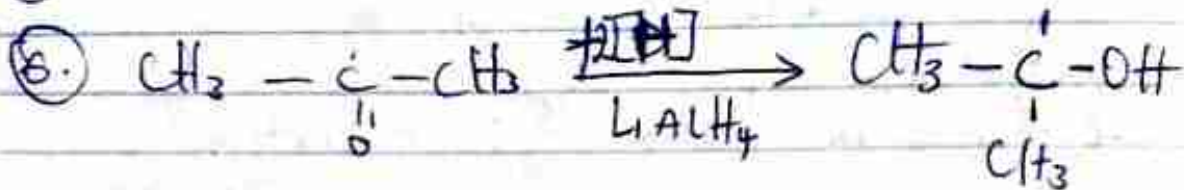


Finally, glucose is converted to ethanol on addition of yeast containing zymase at 15°C.

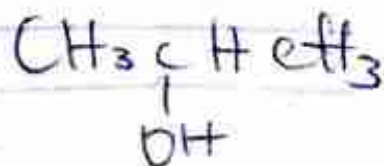
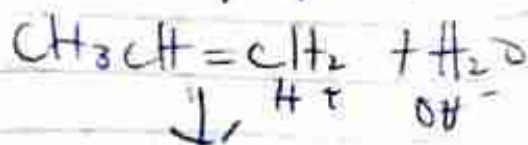
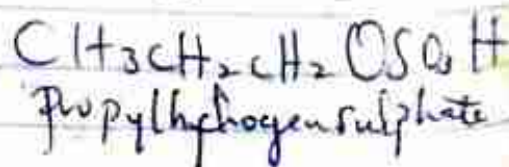
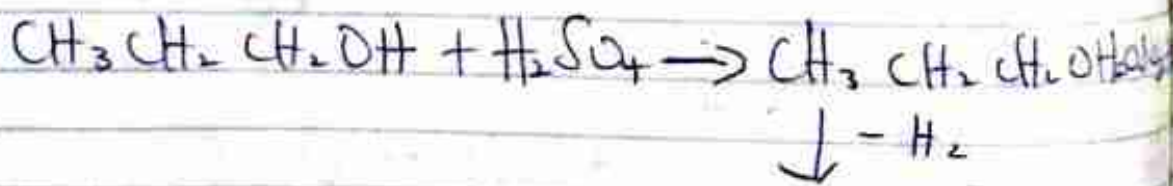




6.



8. Conversion of propan-1-ol to propan-2-ol  
This is done by dehydration



R. - 2

and 3(x-3) ...

(in ... interval)