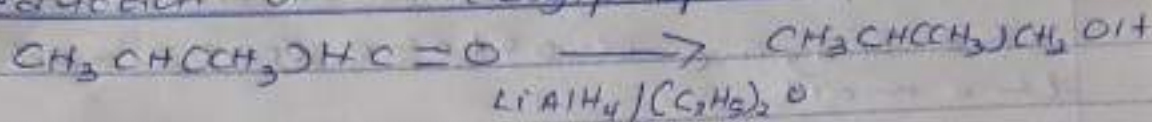
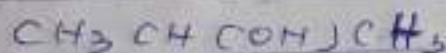
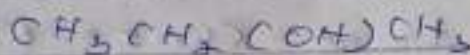
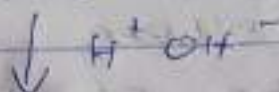
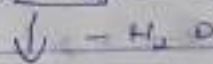
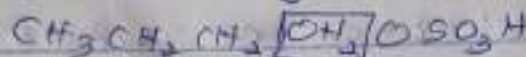
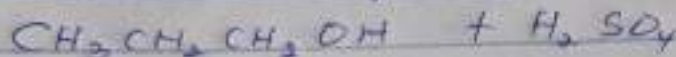


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7) Reduction of 2-methylpropanal

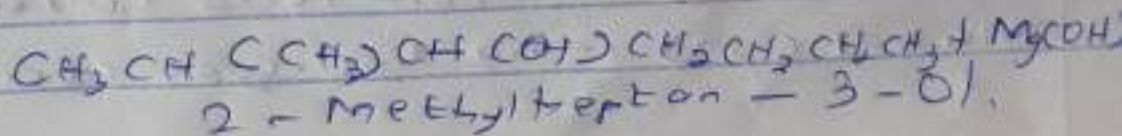
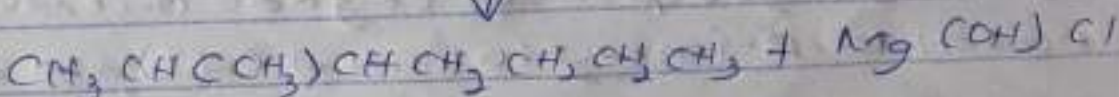
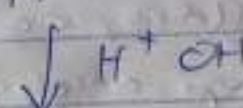
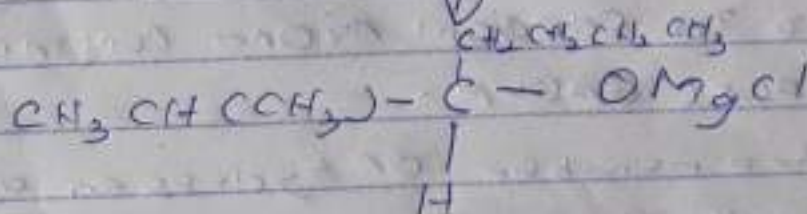
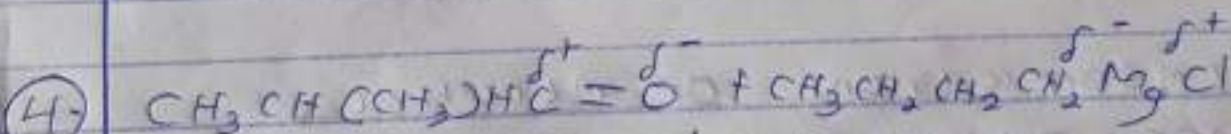


8) Conversion of Propan-1-ol to Propan-2-ol



Propan-2-ol

(Majority product)

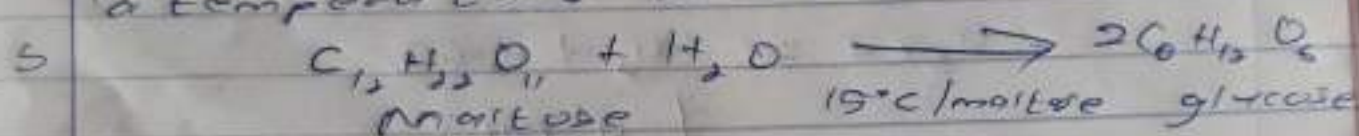


## ③ INDUSTRIAL PRODUCTION OF ALCOHOLS

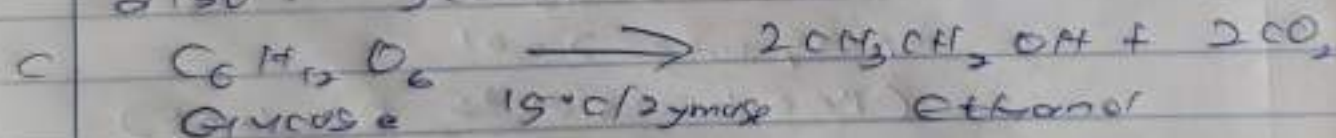
a Starch containing materials including potatoes, cereal, etc on warming with malt to  $60^{\circ}\text{C}$  for a specific period of time are converted into maltose by the enzyme diastase contained in the malt.



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 the enzyme Zymase contained also in yeast.



## ④ CLASSIFICATION OF ALCOHOLS

BASED ON THE NUMBER OF HYDROGEN ATOMS ATTACHED TO CARBON ATOM CONTAINING THE HYDROXYL GROUP.

IF THE NUMBER OF Hydrogen atoms attached to the carbon atom being the hydroxyl group are three or two, it is called a primary alcohol (1<sup>o</sup>), if it is one hydrogen atom it is called secondary alcohol (2<sup>o</sup>) if no hydrogen atom is

attached to the carbon atom bearing the hydroxyl group, it is called a tertiary alcohol ( $3^\circ$ )

Eg.  $\text{CH}_3\text{OH}$  methanol ( $1^\circ$ ),  $\text{CH}_3\text{CH}_2\text{OH}$  ethanol ( $1^\circ$ ),  $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$

Propan-2-ol ( $2^\circ$ ),  $(\text{CH}_3)_3\text{C-OH}$

2-methylpropan-2-ol ( $3^\circ$ ).

BASED ON THE NUMBER OF HYDROXIL GROUP THEY POSSESS

Monohydric alcohols have one hydroxyl group present in the alcohol structure.

Dihydric alcohols are also called

glycols and have 2 (two) hydroxyl

group present in the alcohol structure

while trihydric alcohols have three

hydroxyl group present in the structure

of the alcohol. Polyhydric alcohols

have more than three hydroxyl groups

Eg.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$  propanol (Monohydric alcohol)

$1,2\text{-HOCH}_2\text{CH}_2\text{OH}$  Ethane-1,2-diol (Dihydric alcohol)

$\text{OHCH}_2\text{CH}(\text{OH})\text{CH}_2\text{OH}$  Propan-1,2,3-triol (Trihydric alcohol)

## ② SOLUBILITY.

Lower alcohols with up to three carbon atoms in the molecules are soluble in water because these lower alcohols can form hydrogen bond with water molecules. The water solubility of alcohols

decreases with relative molecular mass.

All monohydric alcohols are suitable

in organic solvents. The solubility of

Simple alcohols and polyhydric alcohols is largely due to their ability to form hydrogen bonds with water molecules.