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Course code: CHM102.

**1. Classification of Alcohols:-**

(a) Depending on the number of hydroxyl groups

**\*** Monohydric alcohols: They contain one -OH group.

Example: CH3CH2OH

**\*** Dihydric Alcohols : They contain two -OH groups.

Example: 1,2-Ethandiol

**\*** Trihydric alcohols: They contain three -OH groups.

Example: 1,2,3-Propantriol

(b) Depending on the number of carbon atoms

**\*** Primary Alcohols : In a primary Alcohol, the carbon atom that carries the -OH group is only attached to one alkyl group. Example: CH3CH2OH (Ethanol).

**\*** Secondary Alcohols: The carbon atom with the -OH group attached is joined directly to two groups, which may be same or different . Example: Propan-2-ol

**\*** Tertiary Alcohols The carbon atom with the -OH group attached is joined directly to three groups which may be the same or different. Example: 2-methypropan-2-ol.

**2. Solubility of Alcohols ;**

(a) In water: Alcohols are very soluble in water. This is due to the presence of the hydroxyl group which is able to form hydrogen bonds with water molecules. Alcohols with smaller hydrocarbons are soluble. As the length of the hydrocarbon increases, the solubility in water decreases.

(b) In organic solvents: Alcohols contain two groups of different polarities , as the size of the alkyl group gets larger, alcohols become less soluble in water. Alcohols with 2 or 3 carbon atoms are miscible in water and are good solvents for organic compounds

( Note: Alcohols are also organic solvents)

**3.** Starchy granules are first extracted by crushing and pressure-cooking the material. They are then treated with malt at 50⁰c to 60⁰c for an hour. Malt (partially germinated barley)contains an enzyme diastase and this converts starch to maltose

2(C6H12O6)(S) + nH2O(l)  diastase nC12H22O11 (aq)

Starch water maltose

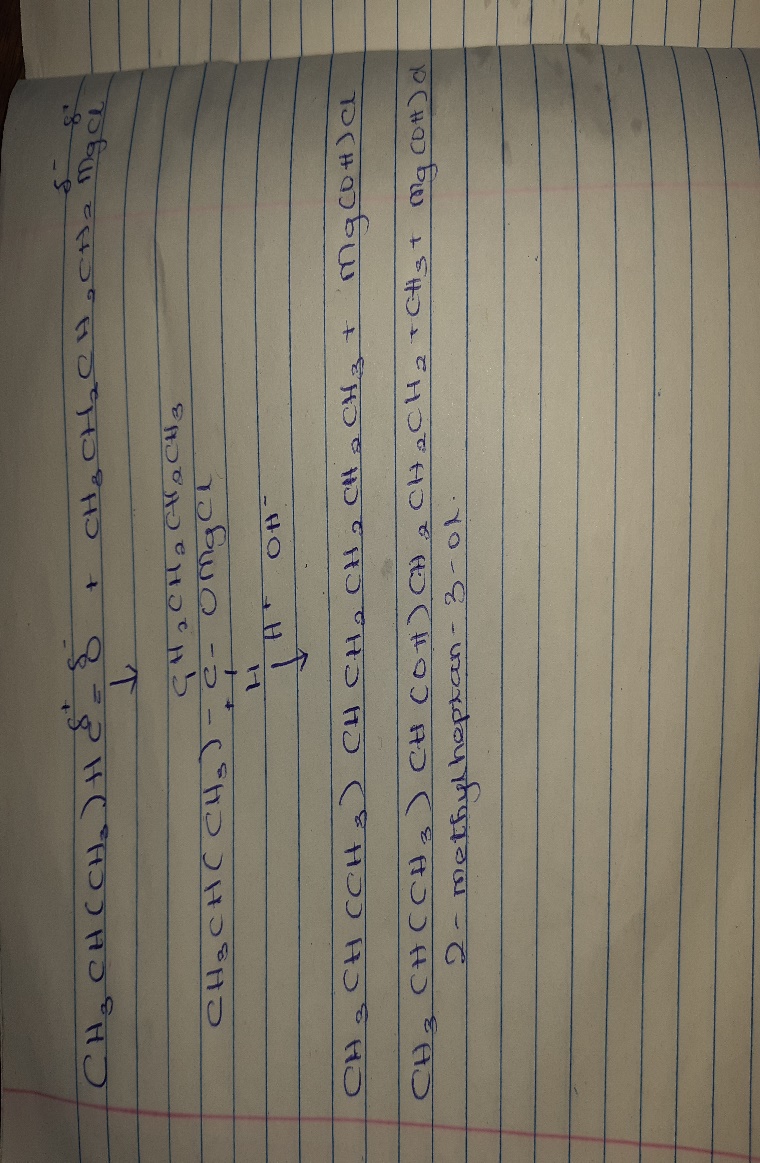
Yeast is then added at room temperature. Yeast contains two enzymes, namely maltase which converts maltose to glucose, and zymase which then decomposes the glucose into ethanol and carbon(iv)oxide.

C12H22O11 (aq)  + H2O(l)  maltase 2C6H12O6 (aq)

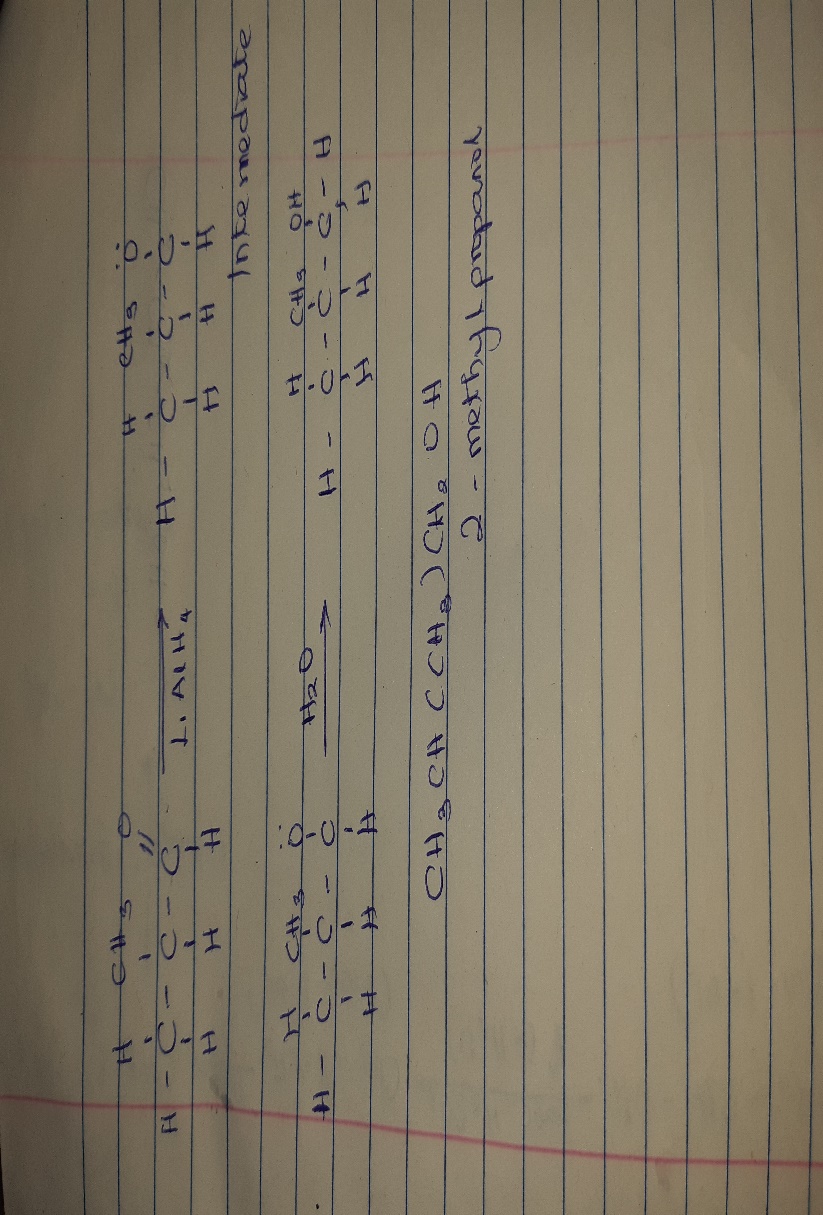
Maltose Glucose

C6H12O6 (aq)  zymase  2C2H5OH + 2CO2

4.



7.



8.

