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19/MTHSD/1003

Discuss the two major classifications of Alkanols. Give 2 examples of each class.

Monohydric Alkanols :- these are alkanols with only one hydroxyl group (OH) in their molecule. The first three members of the family are:

- Methanol: CH_3OH (commonly known as wood spirit)
- Ethanol: $\text{CH}_3\text{CH}_2\text{OH}$ or $\text{C}_2\text{H}_5\text{OH}$
- Propanol: $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ or $\text{C}_3\text{H}_7\text{OH}$

Polyhydric Alkanols :- this class of alkanols contains more than one hydroxyl groups per molecule.

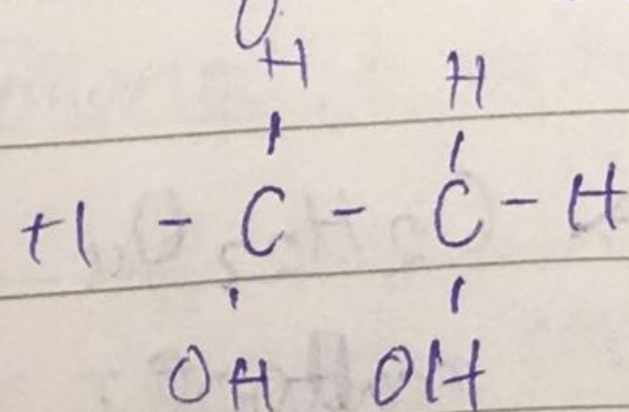
It occurs in two sub classes namely the dihydric alkanol and trihydric alkanol.

Examples of this class includes:

Dihydric Alkanol

Ethane-1,2-diol

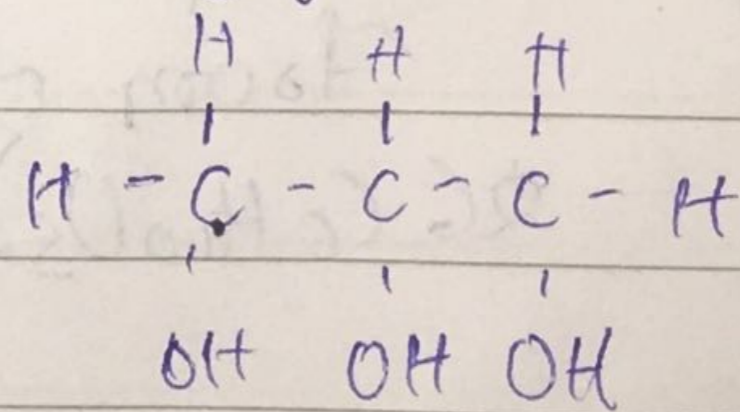
(ethylene glycol)



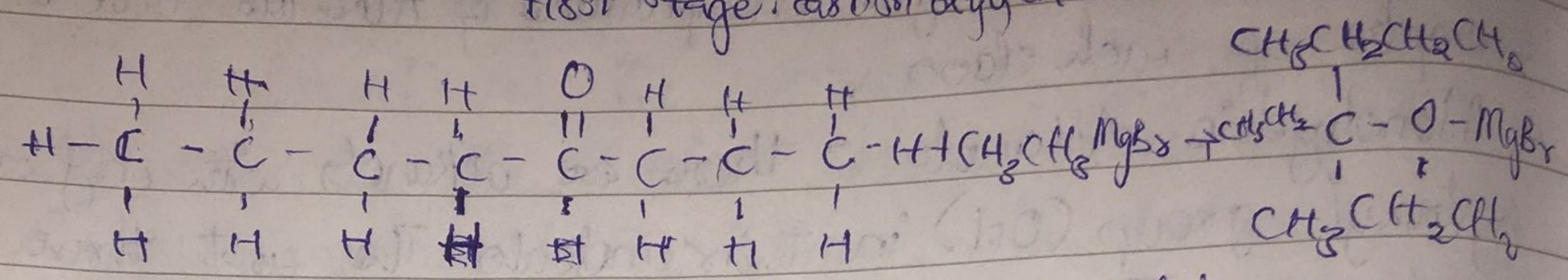
Trihydric Alkanol

Propan-1,2,3-triol

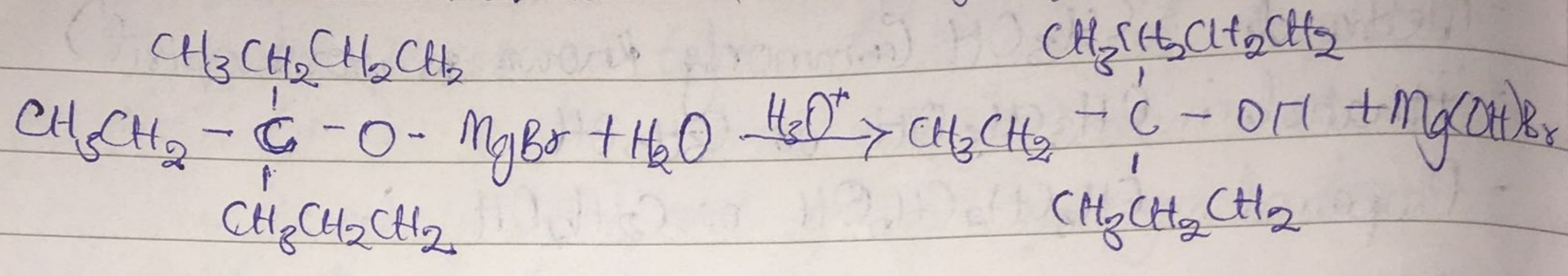
(glycerol)



2. first stage: the Grignard reagent adds across the carbon oxygen double bond.



Dilute acid is then added to hydrolyse it:

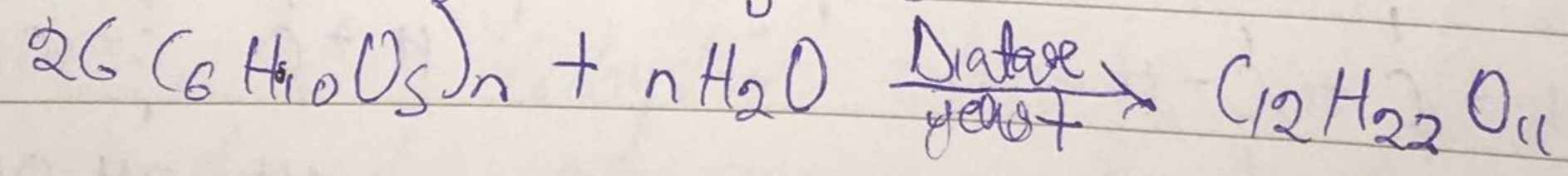


3. Fermentation is the chemical process that involves the breaking down of molecules such as glucose anaerobically with the release of carbon dioxide gas and alcohol.

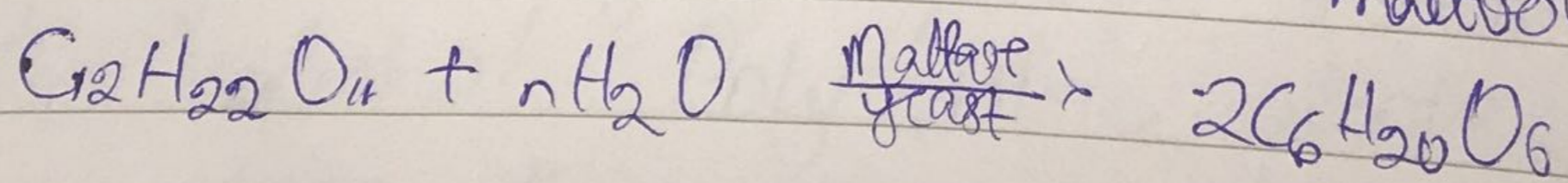
The production of ethanol by fermentation occurs in three basic steps: -

The temperature of the reactions occur at a minimum temperature of $(25-35)^\circ\text{C}$

from starch (grains)



maltose



glucose

