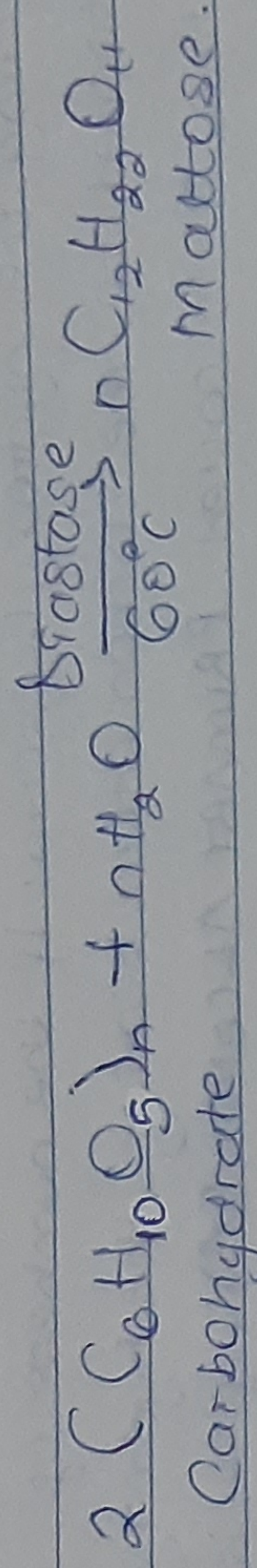
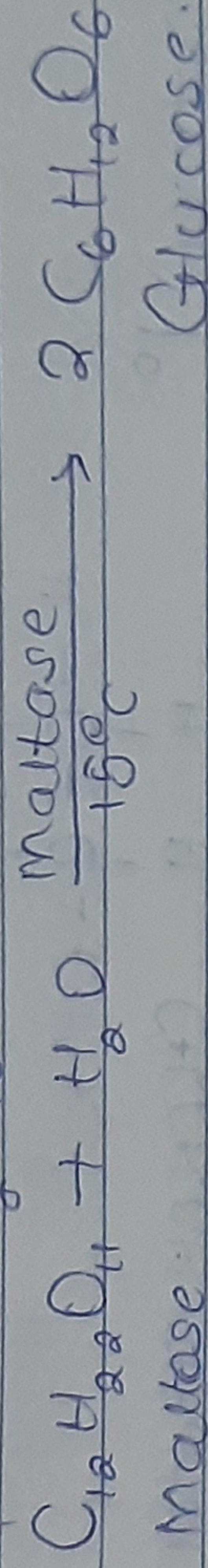


3) Industrial manufacture of ethanol:

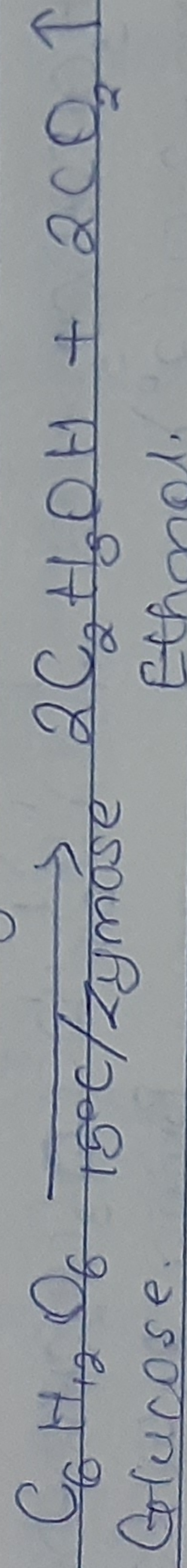
Step 1: Any food containing Starch e.g. yam, rice, wheat, etc and on warming with malt to 60°C for a specific period of time are converted to maltose by an enzyme called maltase contained in malt.



Step 2: The maltase is broken down into glucose on addition of yeast which contains the enzyme maltase and at a temperature of 15°C.

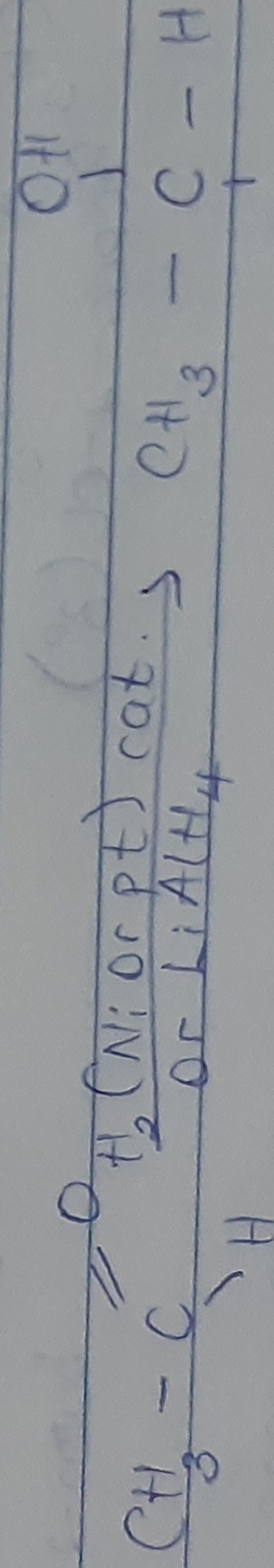


Step 3: The glucose at constant temperature of 18°C is then converted into alcohol (ethanol) by the enzyme Zymase contained also in yeast.



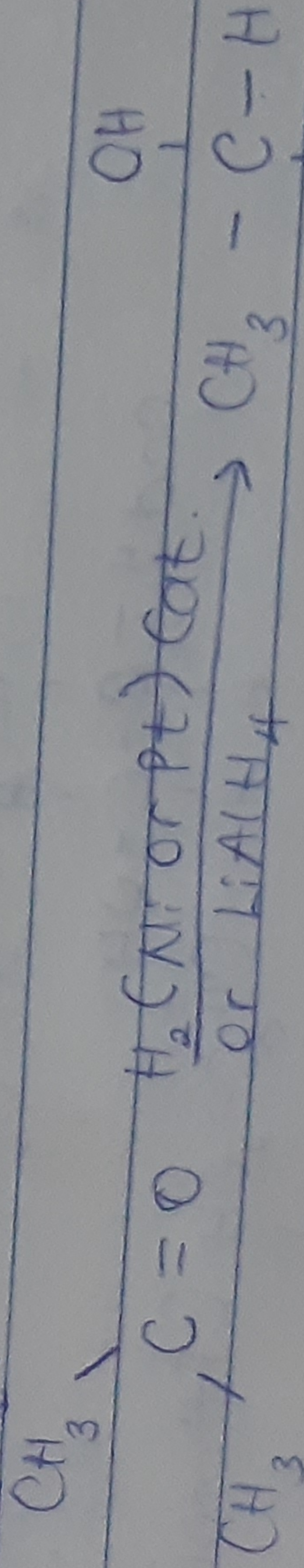
The gas CO_2 is given off to the atmosphere.

4) When you reduce Alkanal, the product is a primary alcohol.



Ethanal Ethanol

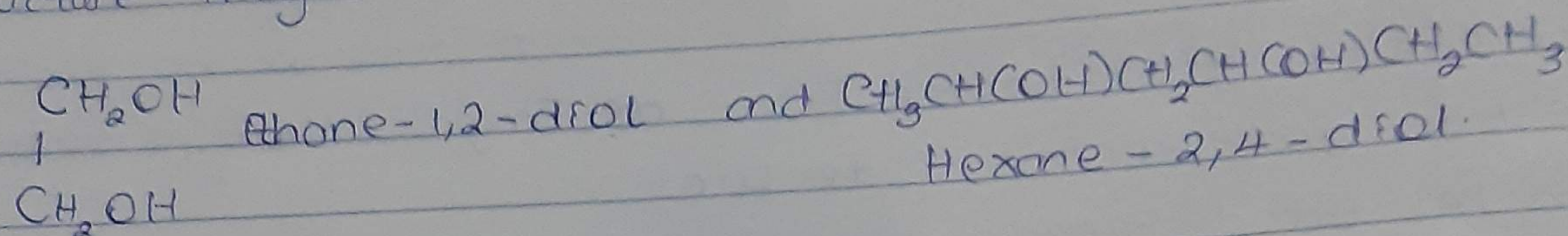
And when you reduce Alkaneone, the product is a secondary alcohol.



Propanone Propan-2-ol.

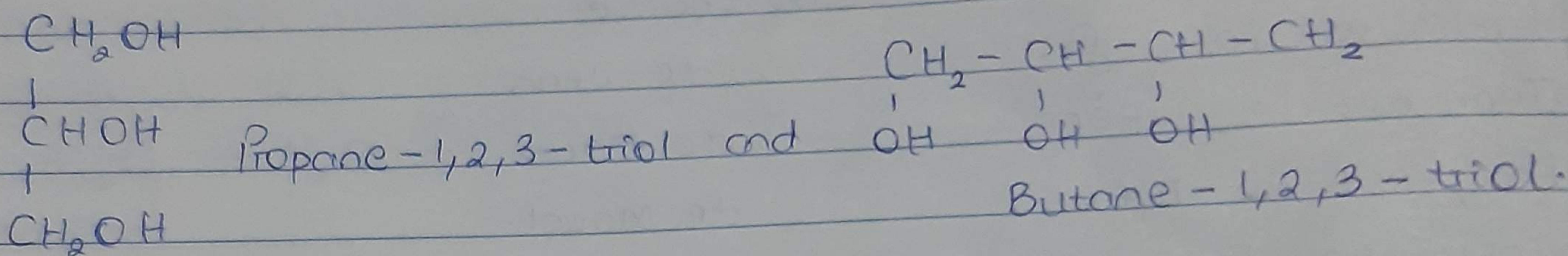
b) Dihydric alcohols

They have two hydroxyl groups present in the alcohol structure. They are also known as glycols. Examples:

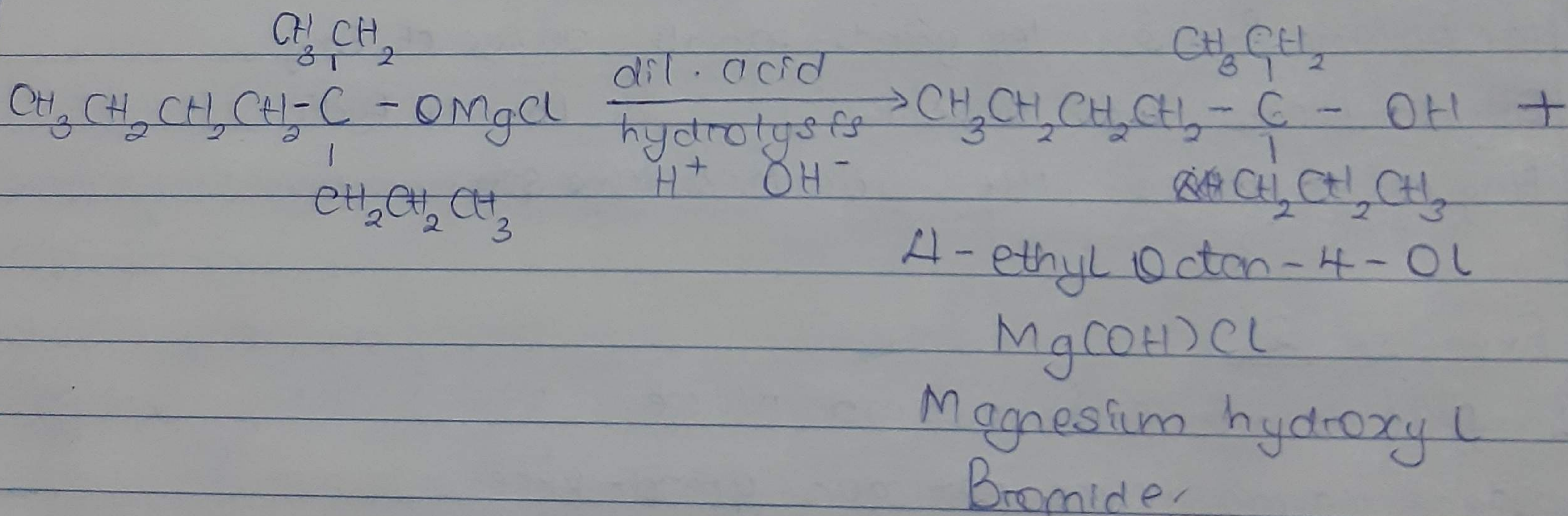
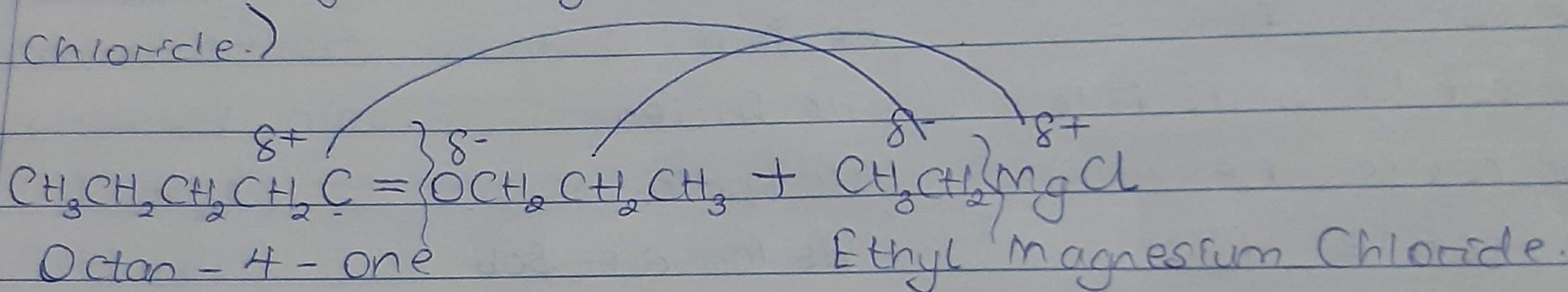


c) Trihydric alcohols

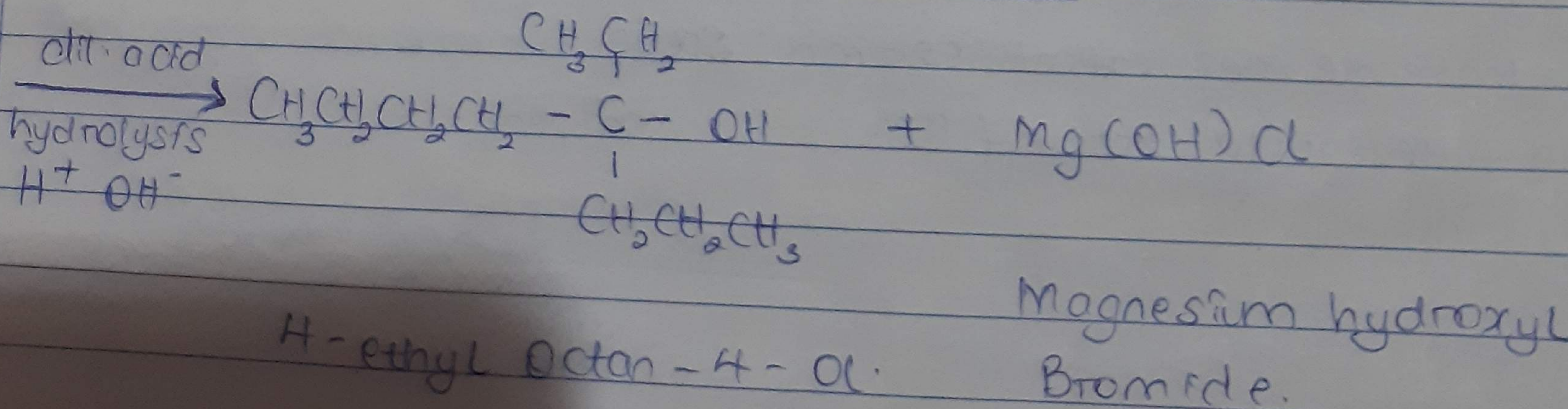
They have three hydroxyl groups present in the structure of the alcohol. It is also known as triol. Examples:



2) Named Grignard reagent: $\text{CH}_3\text{CH}_2\text{MgCl}$ (Ethyl Magnesium Chloride)



PRODUCT OF THE GRIGNARD SYNTHESIS



Chm 102 ASSIGNMENT

Name: Tobby, Glory Inyang

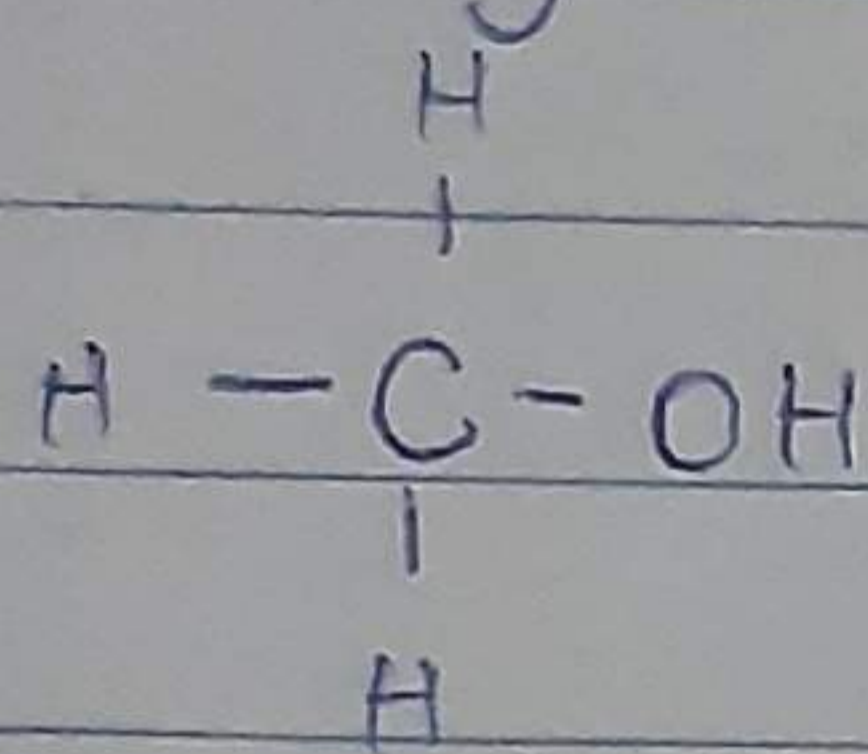
Department: Medicine and Surgery (MBBS)

Matric Number: 19/MHS01/406

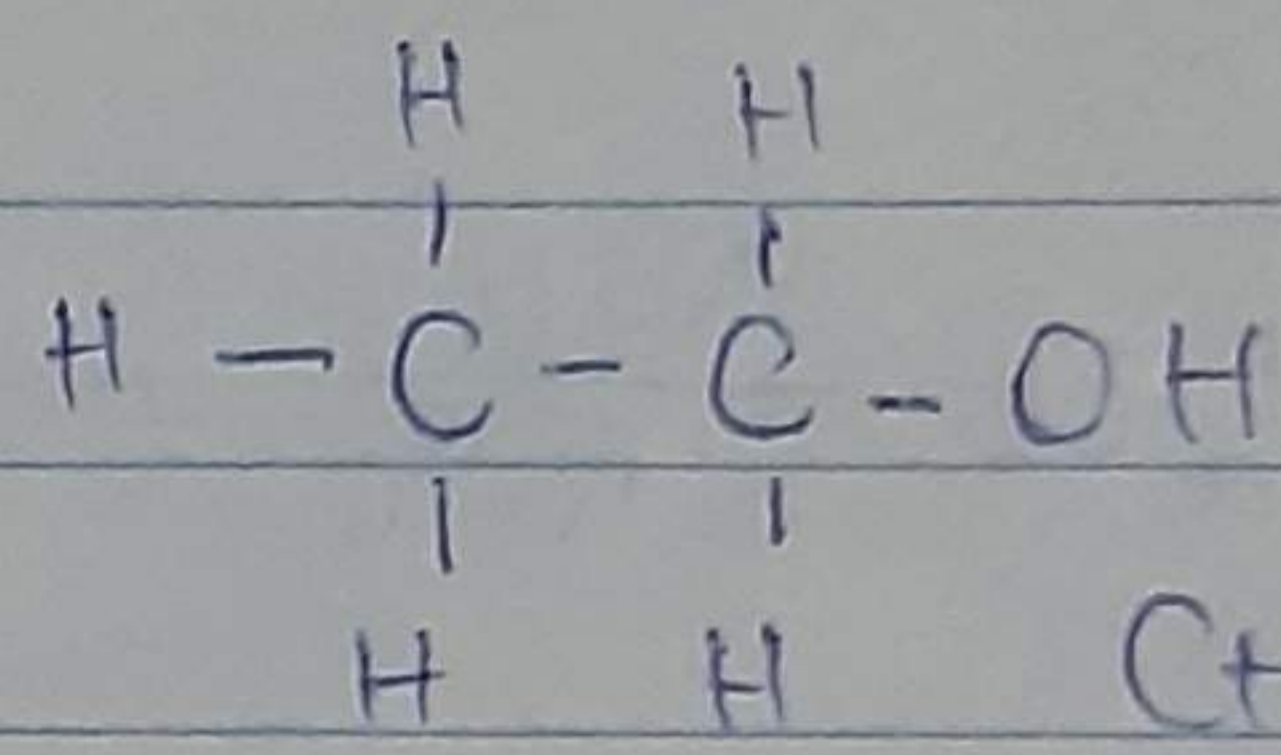
1) Classification of alcohols

(i) This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the numbers of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is called PRIMARY ALCOHOL (1°), if it is one hydrogen atom it is called SECONDARY ALCOHOL (2°) and if no hydrogen atom is attached to it it is called TERTIARY ALCOHOL (3°).

a) Primary alcohol (1°): Examples



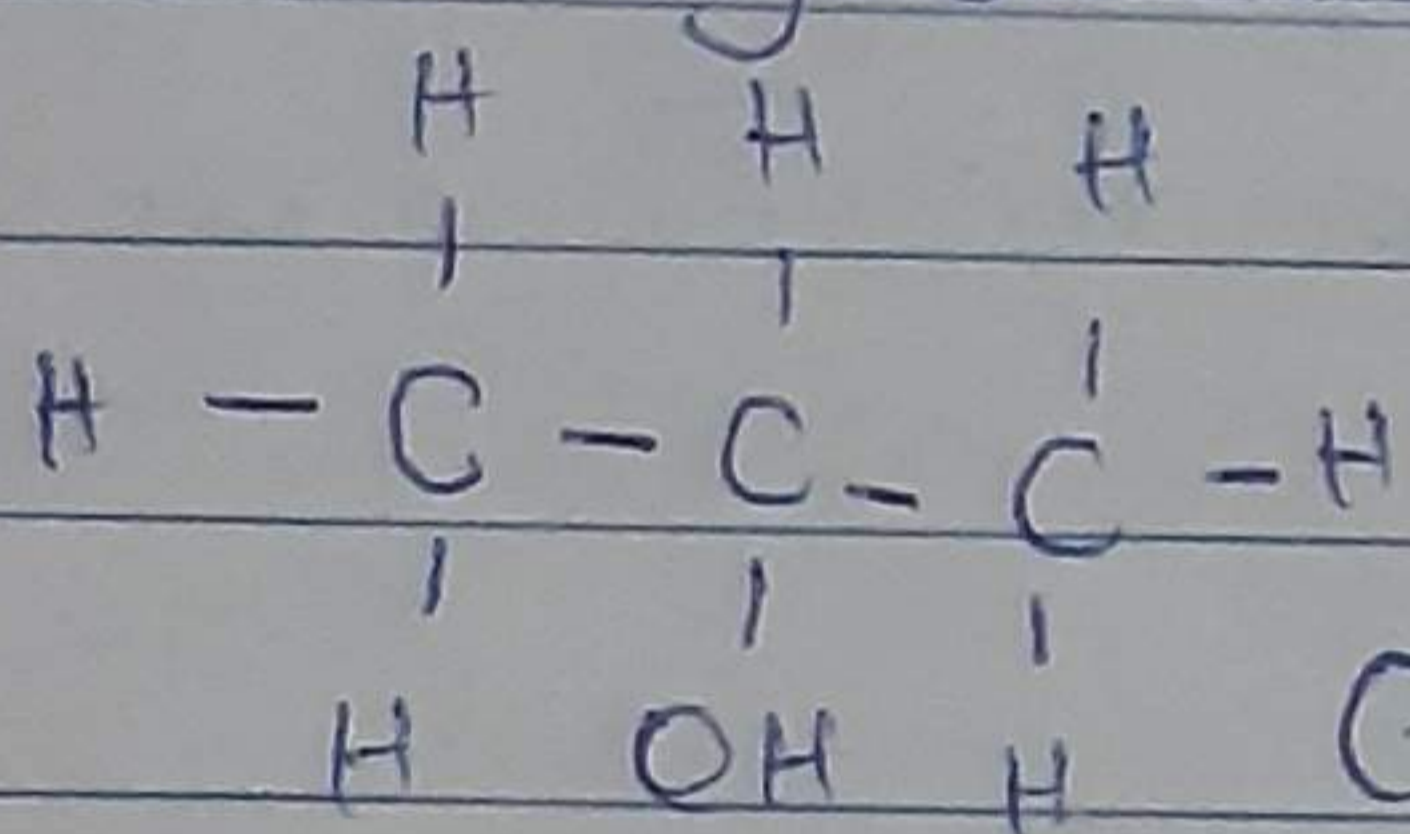
and



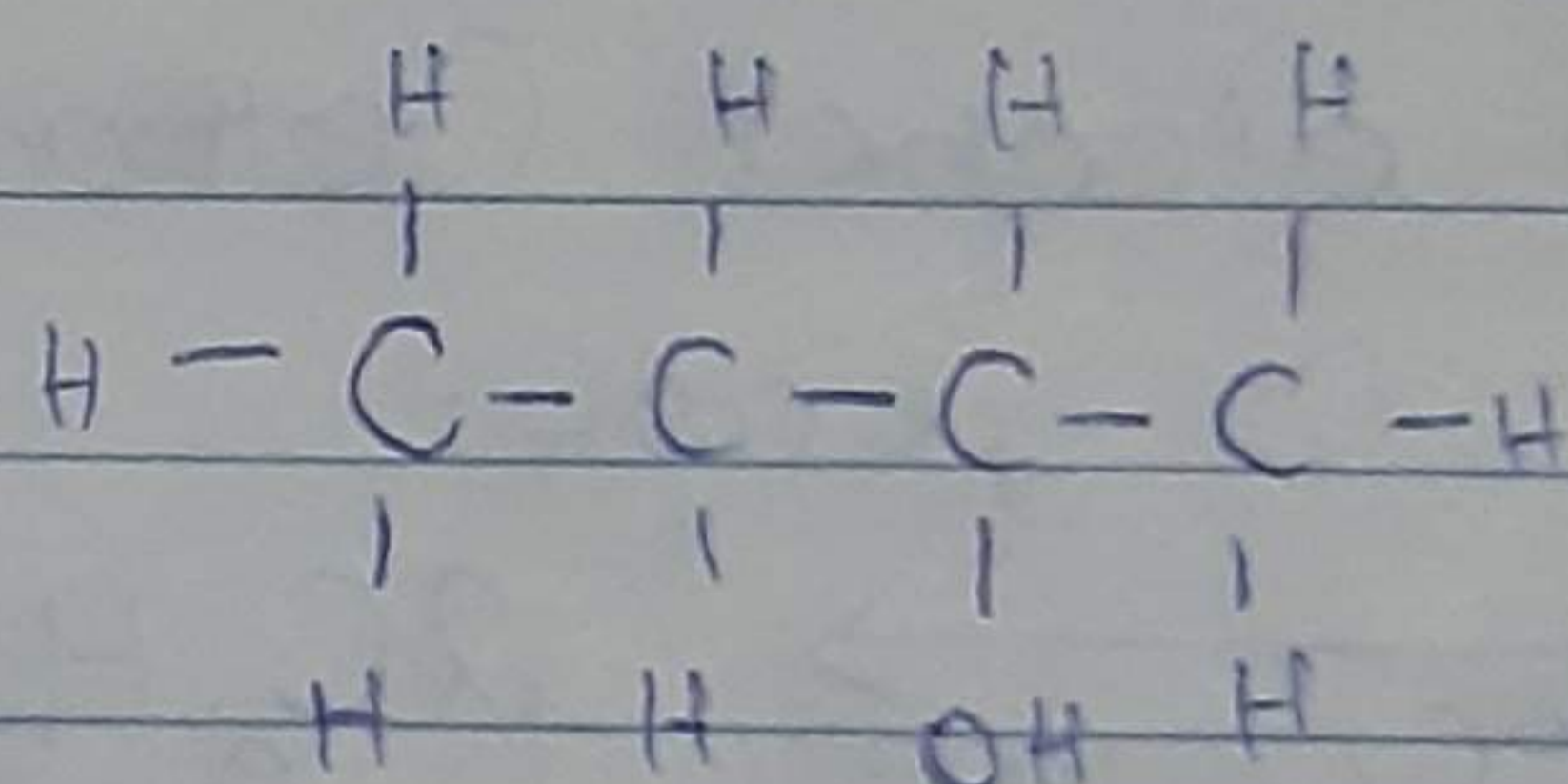
CH_3OH (Methanol) 1°

$\text{CH}_3\text{CH}_2\text{OH}$ Ethanol (1°)

b) Secondary alcohol (2°): Examples



and



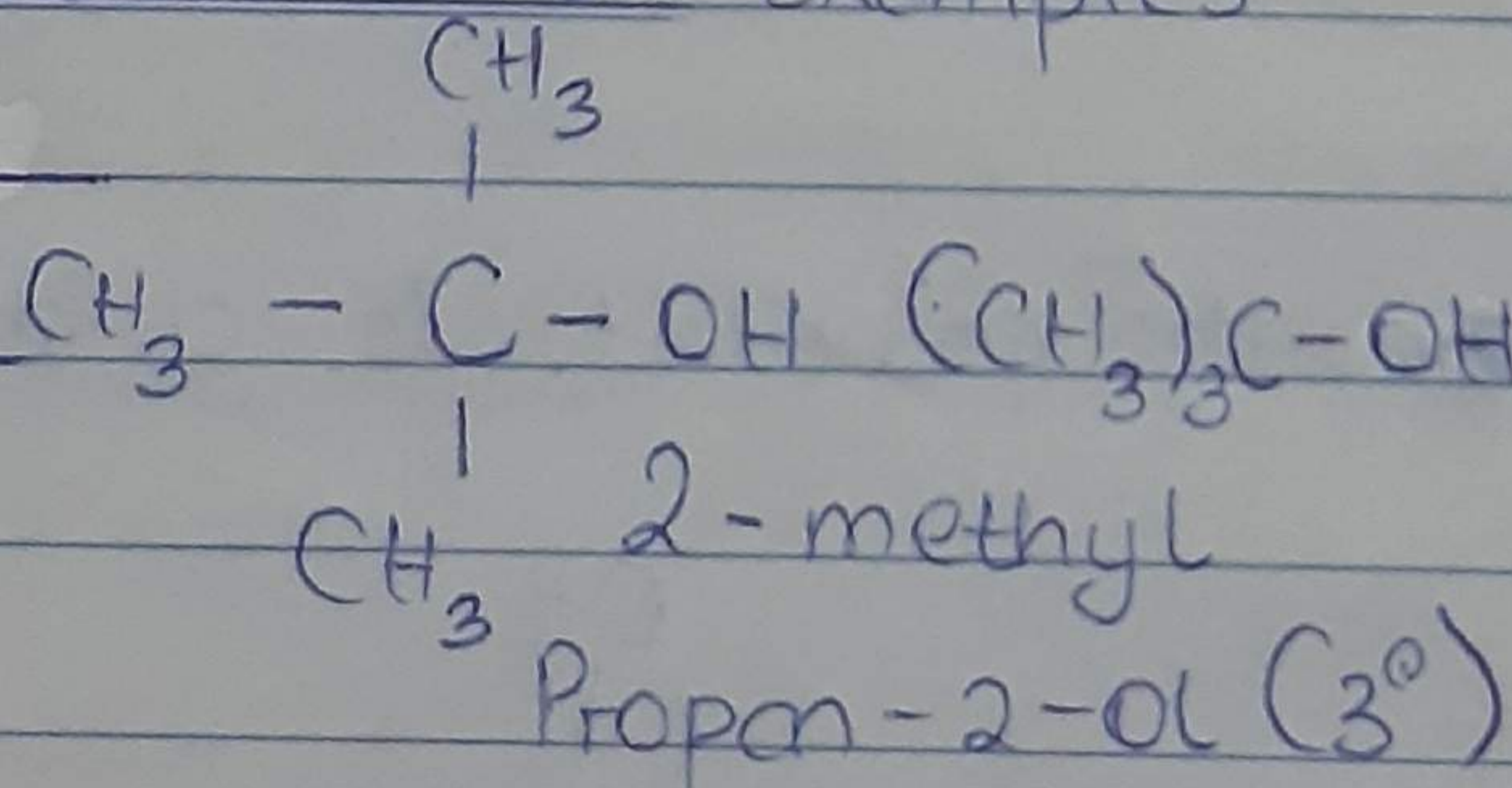
$\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$

Propan-2-ol (2°)

$\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$

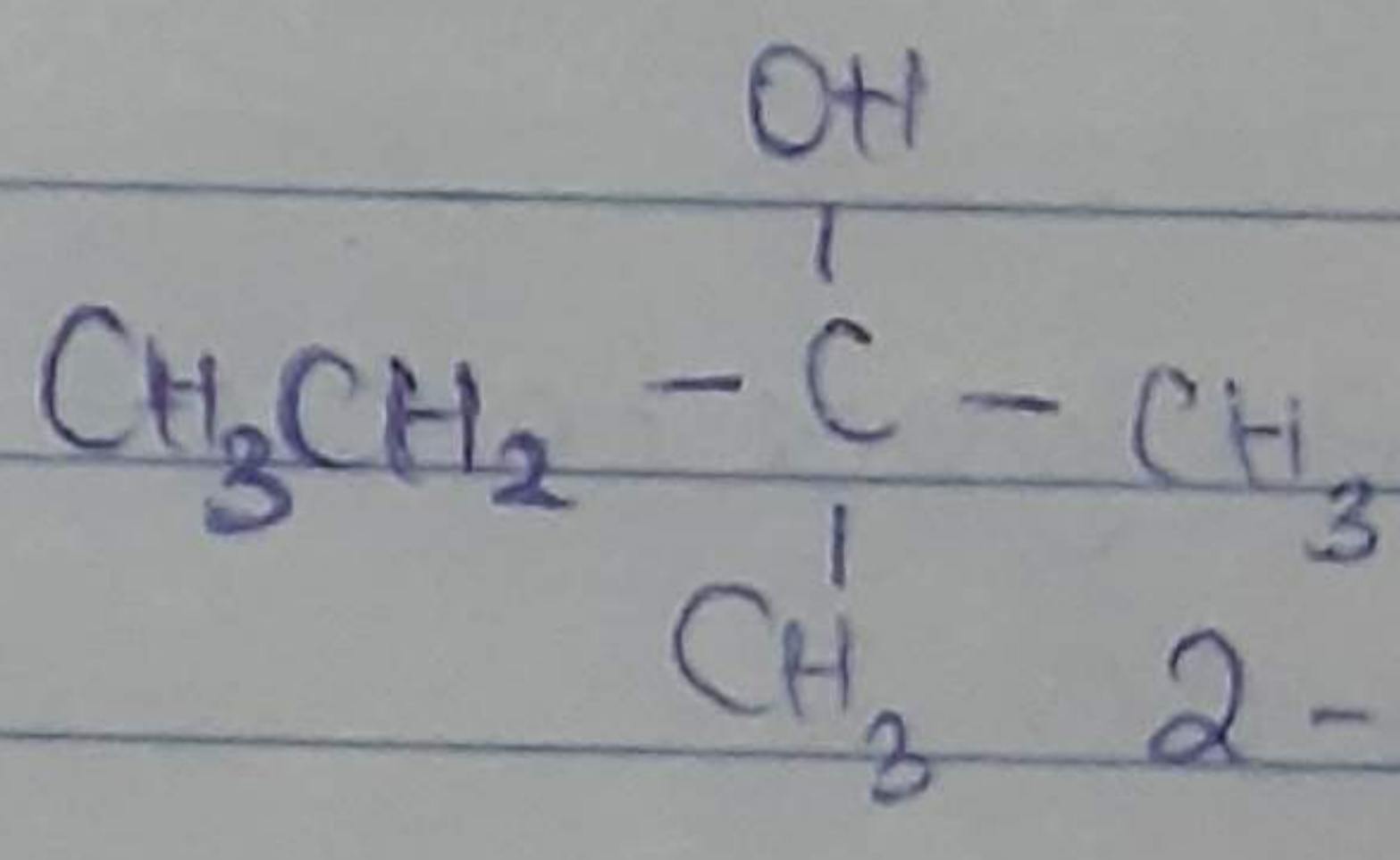
Butan-2-ol (2°)

c) Tertiary alcohol (3°): Examples



$(\text{CH}_3)_3\text{C}-\text{OH}$

2-methyl
Propan-2-ol (3°)



2-methyl

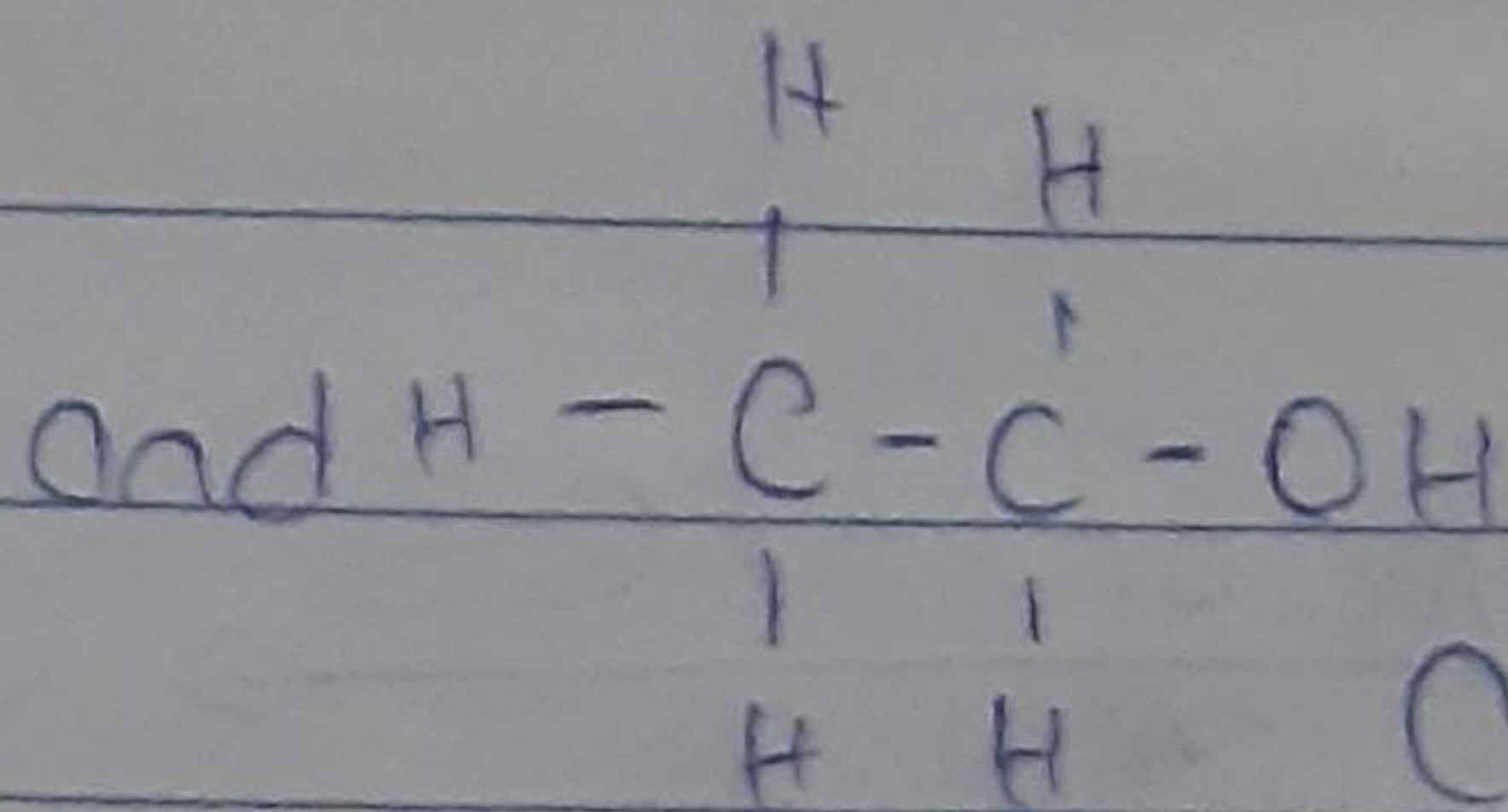
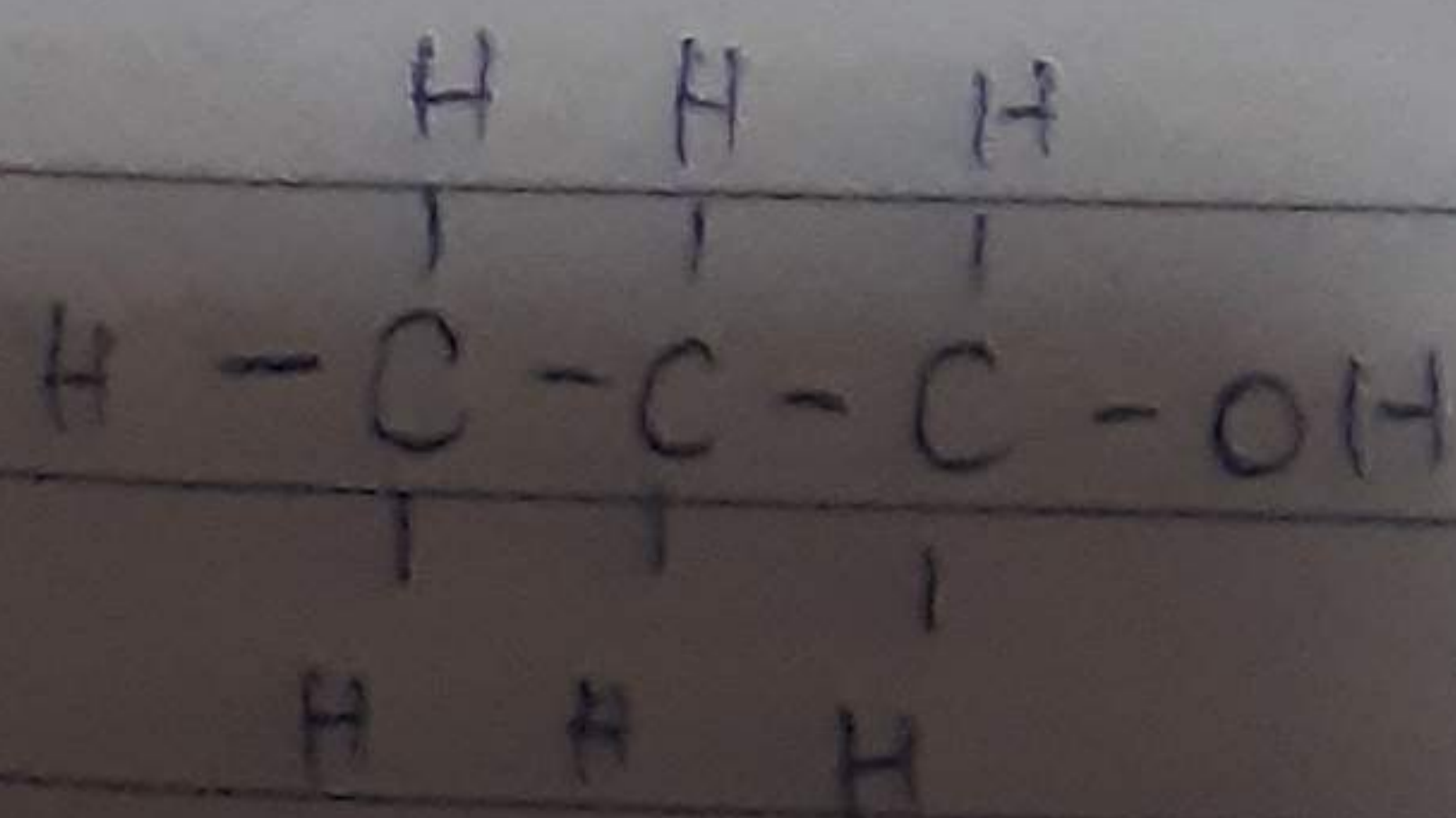
butan-2-ol (3°)

(ii) This is based on the number of hydroxyl groups they possess.

a) Monohydric alcohol:

They have one hydroxyl present in the alcohol structure

Examples:



$\text{CH}_3\text{CH}_2\text{OH}$ (Ethanol)

$\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ (Propanol)