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 Matric No: 171MHS061027
 Course Code: CHM 102
 ASSIGNMENT

1. Two major classification of Alkanols, with two examples each
 Ans Primary Alkanols: are those alkanol that the hydroxyl group is attached to a primary (terminal) carbon atom in the molecule it is characterized by $-CH_2OH$.

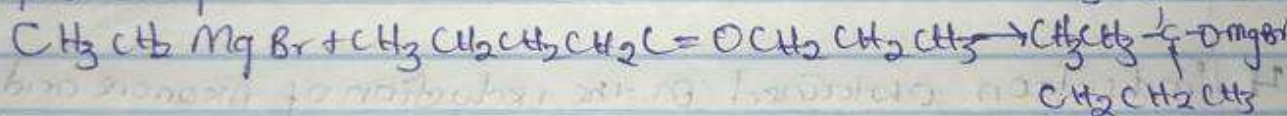
- Examples
 i) CH_3OH Methanol
 ii) CH_3CH_2OH ethanol.

Secondary Alkanol: In a secondary alkanol the $-OH$ group is on a secondary carbon atom: characterized by $>CHOH$
 Examples

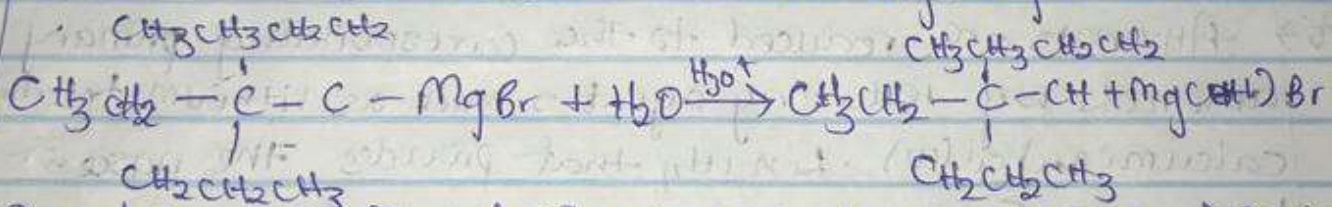
- i) $CH_3CH(OH)CH_3$ Propan-2-ol
 ii) $C(CH_3)_2CH_2OH$ 2-methylpropan-2-ol

2. In the Grignard synthesis of Alkanols, react a named Grignard reagent with

$CH_3CH_2CH_2CH_2C=OCH_2CH_2CH_3$ Show the reaction steps
 first stage



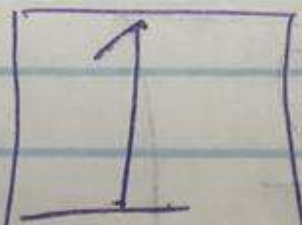
Dilute acid is then added to this to hydrolyze it



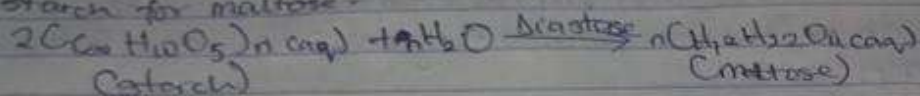
An alcohol is formed - The key of Grignard reagent is the ability to make complicated alcohols easily.

3. Industrial preparation of Ethanol.

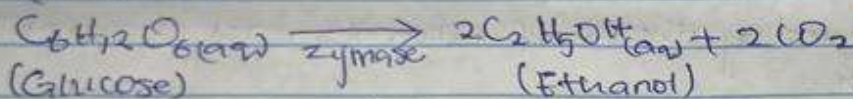
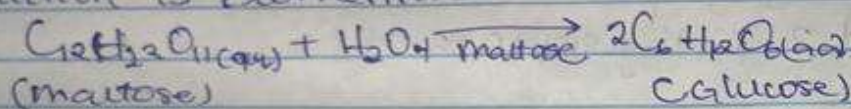
(a) The starch containing crop such as Cassava, is peeled crushed and steam-treated or pressure cooked to release with water, to obtain a mash.



b. The mash is treated with malt yeast, and warmed at 50°C for two hours. Enzyme diastase in the malt hydrolyses starch to maltose.



c. Yeast containing enzymes maltase and zymase is added to the mixture and kept at room temperature (about 27°C) for ~~several~~ ~~glucose~~ ~~to~~ ~~extract~~ ~~with~~ ~~the~~ about three days. During this period, enzyme zymase permits glucose to ethanol with the evolution of carbon dioxide. The reaction is exothermic.

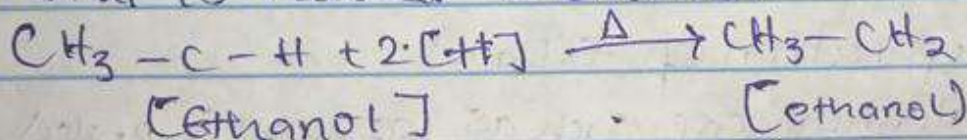


The mixture is distilled, to obtain 95% ethanol that boils at 78°C.

4 Production obtained in the reduction of alkanone and Alkanol:

Ans → Alkanols are reduced to the corresponding primary alkanols by reducing agents such as lithium tetrahydride aluminium (LiAlH₄) that provides the nascent hydrogen, [H], which causes reduction.

(a) Ethanal is reduced to ethanol



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Generally R-C(=O)-C Alkanol. This reagent. Alkanol. COH-C(=O)-C the nas

