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 DEPARTMENT: NURSING SCIENCE
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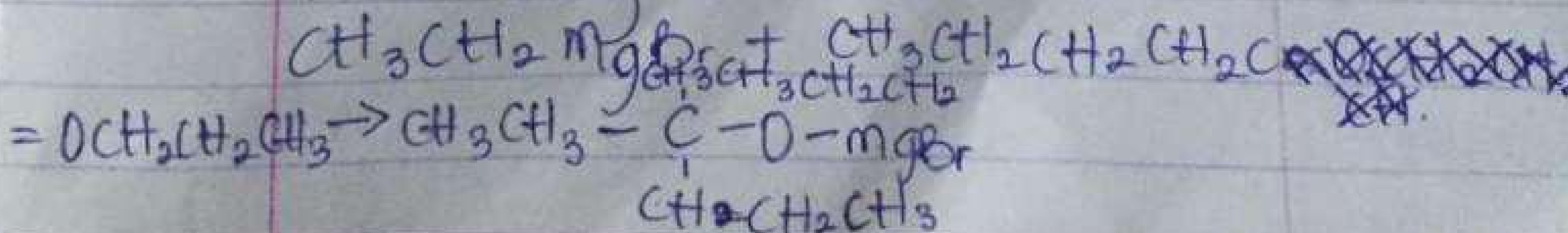
1a.) Primary alcohol: The hydroxyl group is attached to a primary carbon atom in the molecule. It is characterized by CH_3OH . Examples are:-

- i.) CH_3OH methanol ii.) $\text{CH}_3\text{CH}_2\text{OH}$ ethanol

b.) Secondary alcohol: the OH group is on a secondary carbon atom characterized by CH(OH) . Examples are: i.) $(\text{CH}_3)_2\text{CH-OH}$ 2-methylpropan-2-ol ii.) $\text{CH}_3\text{CH(OH)CH}_3$ propan-2-ol

2.) In the Grignard synthesis of alcohols, react a named Grignard reagent with $\text{CH}_3\text{CH}_2\text{CH}_2\text{C}=\text{OCH}_2\text{CH}_2\text{CH}_3$ show the reaction steps.

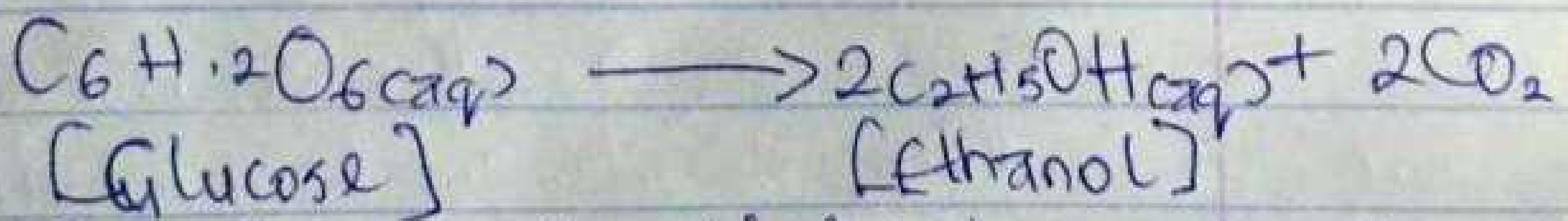
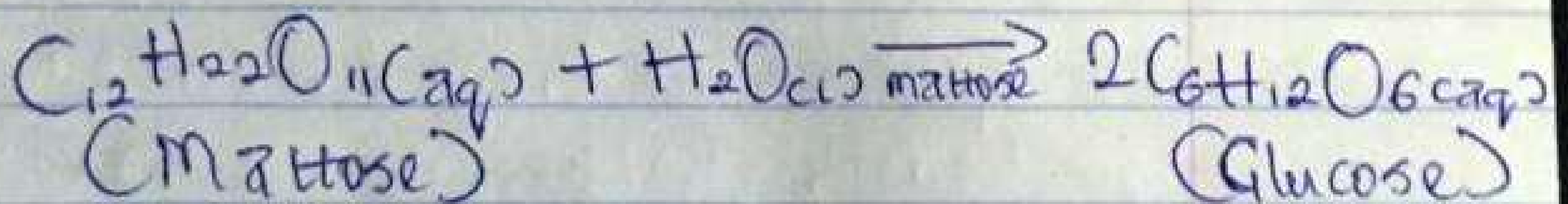
First stage



c) Yeast containing enzymes maltose and Zymase is added to mixture and kept at room temperature [about 27°C] for three days.

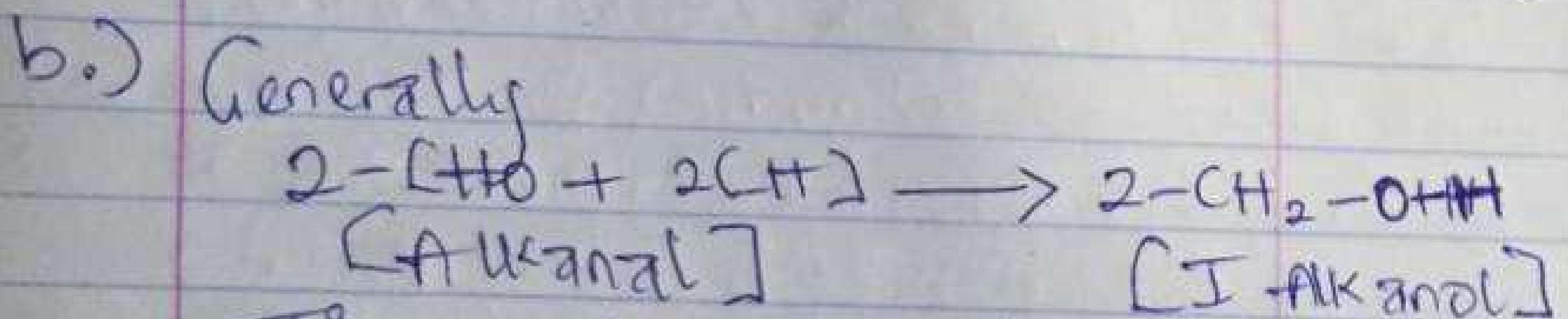
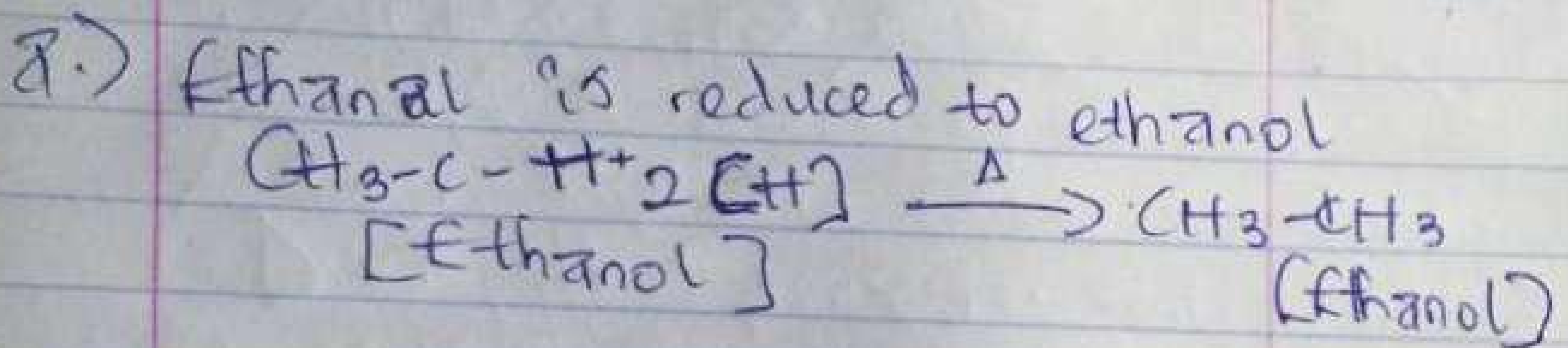
~~During this period, enzyme, Zymase and maltose ~~and~~ is added to mixture and kept at room temperature [about 27°C].~~

During this period, enzyme, Zymase ferments glucose in ethanol with the evolution of carbon (IV) oxide. The reaction is exothermic.



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

A.) Alkanols are reduced to the corresponding primary alkanols by reducing agents such as Lithium tetrahydridoaluminate (LiAlH₄) that provides the nascent hydrogen [H], which causes reduction;



This reaction shows that alkanals are ordinary agents.

Alkanones are reduced to the corresponding secondary alkanol; LiAlH₄ reduced propanone (CH₃-C(=O)-CH₃ + 2[H]) → CH₃-CH(OH)-CH₃ to propan-2-ol.

The reducing agent provides the recent hydrogen atom as [H].