

Answers

1 Classification of Alkanols;

A Based on the number of hydrogen on the carbon atom carrying the OH (alcohol functional group). Based on this, Alkanols are classified into primary, secondary and tertiary alkanols: (i) Primary alkanols are those alkanols that have 2 hydrogen atoms on the carbon atom bearing the OH group eg methanol, ethanol

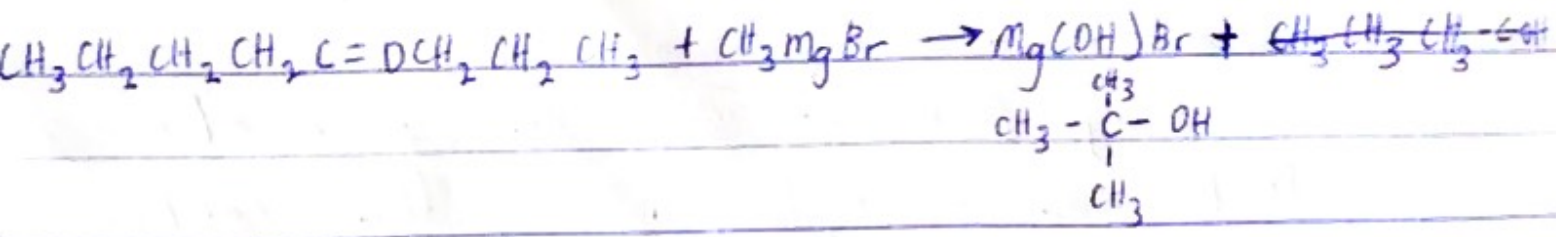
(ii) Secondary Alkanol: They are those alkanols that have one hydrogen atom on the carbon atom that bears the OH group eg Propan-2-ol

(iii) Tertiary Alkanol: They are those alkanols that have no hydrogen on the carbon atom that bear the OH group eg 2-methyl propan-2-ol

The second classification is based on the number of OH groups they possess. They are

- i) Monohydric Alkanols: Only one Hydroxyl group is present in the alcohol structure
- ii) Dihydric Alkanols: Also called Glycols, they have 2 hydroxyl group present in their alcohol structure
- iii) Trihydric Alkanols: Also called triols, they have 3 hydroxyl group present in their alcohol structure eg Glycerol

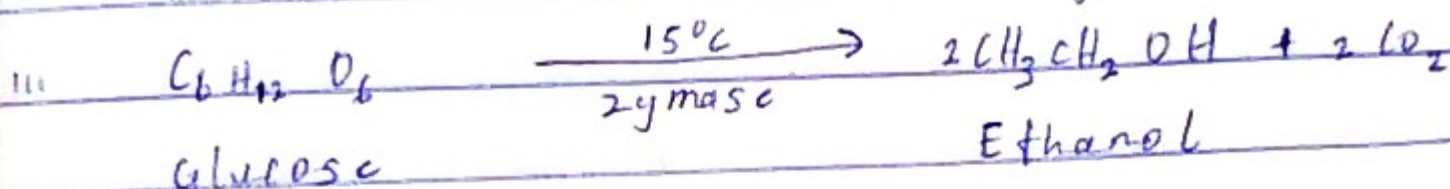
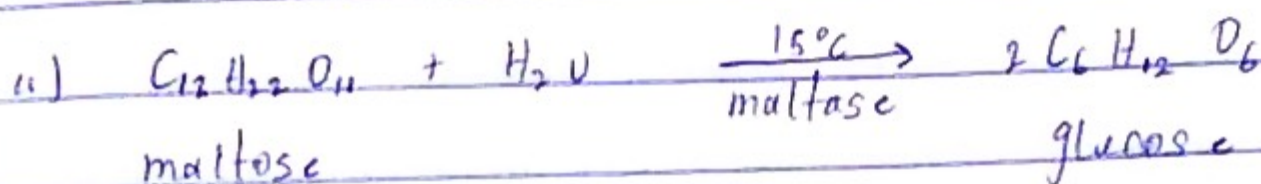
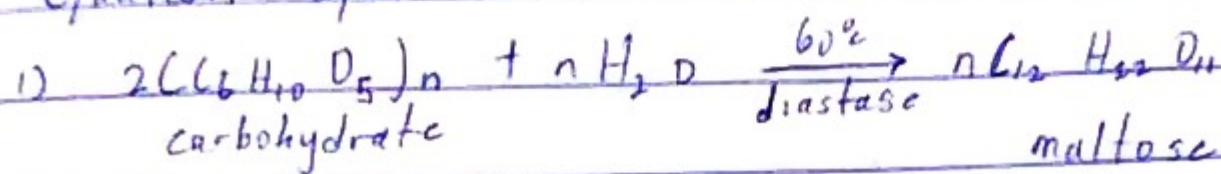
2. Grignard Synthesis: This is used in producing primary, secondary and tertiary alcohols. It is done by hydrate Alkylmagnesiumhalide with dilute acid



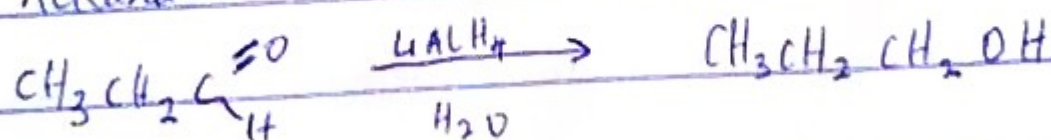
3. Starch is converted to Ethanol through a process called fermentation. Firstly the starch is warmed with malt at a temp of 60°C at which it is converted to Maltose by an enzyme

called diastase, the maltose is converted to glucose by addition of yeast to maltose, the enzyme maltase contained in yeast converts maltose to glucose at a temp of 15°C glucose is then converted to ethanol by the action of zymase contained in yeast at 15°C

Equation of reactions



4) i) Reduction of Aldehyde: Reduction of an aldehyde is going to give a primary alcohol
Alkanal:



ii) Reduction of ketones: Alkanones are reduced to give secondary alcohol

