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MATRIC NO: 191MH301/306

DEPARTMENT: Medicine and Surgery

COURSE: ~~Mathematics 104~~ Chemistry 102

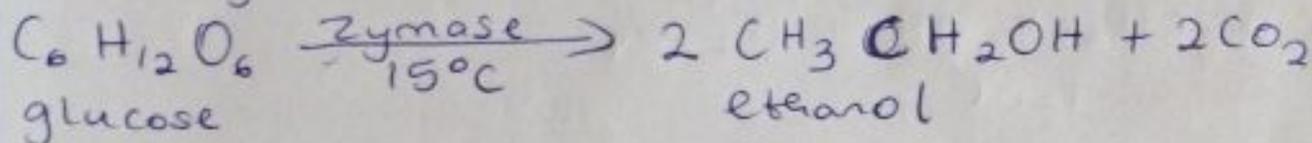
- 1) Alcohols are very important organic compounds. Discuss briefly their classification and give one example each. There are two major ways of classifying alcohols.
- a) This type of classification is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. This classification divides alcohols into three
- Primary alcohols: Alcohols in which there are two or three hydrogen atoms attached to the carbon carrying the hydroxyl group e.g CH_3OH (methanol)
 - Secondary alcohols: Alcohols in which there is only one hydrogen atom attached to the carbon carrying the hydroxyl group e.g $\text{C}_2\text{H}_5\text{COH}$
 - Tertiary alcohols: Alcohols in which there are no hydrogen atoms attached to the carbon bearing the hydroxyl group e.g $(\text{C}_2\text{H}_5)_3\text{C}-\text{OH}$
- b) The second type of classification is based on the hydroxyl groups present in the alcohol. This classification divides alcohols into four.
- Monohydric alcohols: Alcohols which have one hydroxyl group present in their alcohol structure e.g $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
 - Dihydric alcohols: Alcohols which have two hydroxyl groups present in their alcohol structure e.g $\text{HOCH}_2\text{CH}_2\text{OH}$
 - Trihydric alcohols: Alcohols which have ~~two~~ three hydroxyl groups present in their alcohol structure e.g $\text{C}_3\text{H}_8\text{O}_3$
 - Polyhydric alcohols: Alcohols which have more than three hydroxyl groups in their alcohol structure. They are also referred to as polyols e.g $\text{C}_6\text{H}_{14}\text{O}_6$
- 2) Discuss the solubility of alcohols in water, organic solvents

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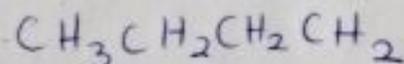
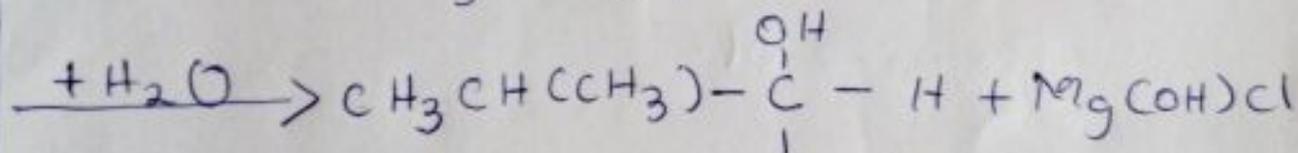
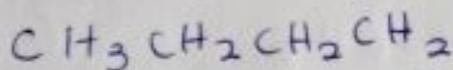
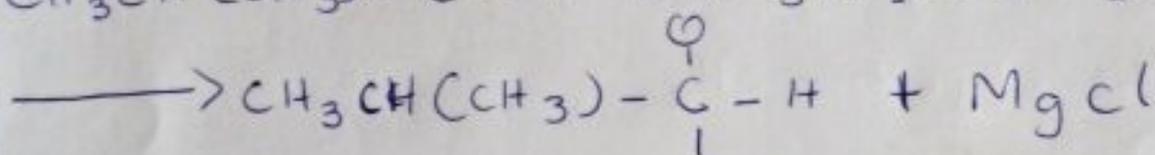
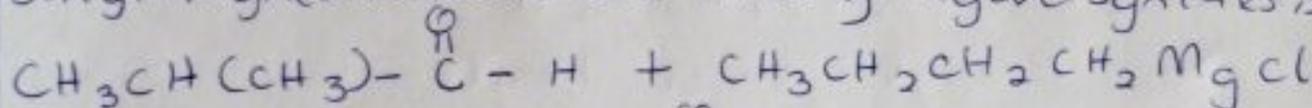
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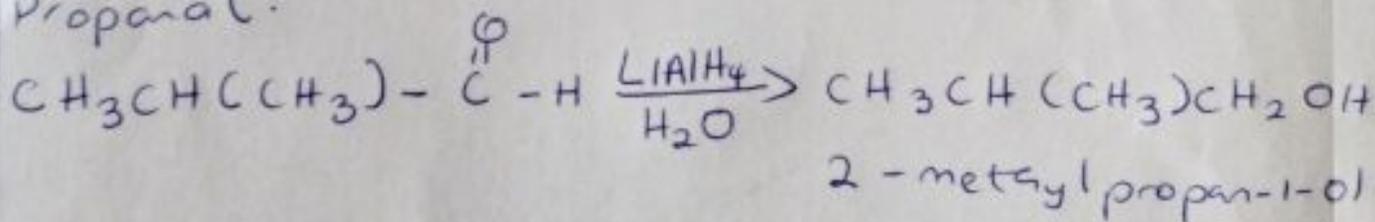
- 3) The glucose at constant temperature is then converted into alcohol by the ~~enz~~ enzyme Zymase contained also in yeast.



- 4) Show the reaction between 2-methyl propanal and butylmagnesium chloride Hint: Grignard synthesis is



- 7) Show the reduction reaction of 2-methyl Propanal.



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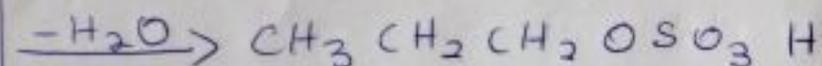
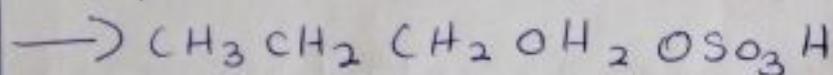
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8) Propose a scheme for the conversion of propan-1-ol to propan-2-ol

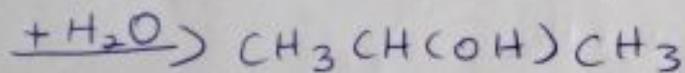
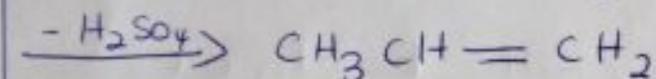
Propan-1-ol to propan-2-ol



Propan-1-ol



Propyl hydrogen sulphate



Propan-2-ol.