

osford 20

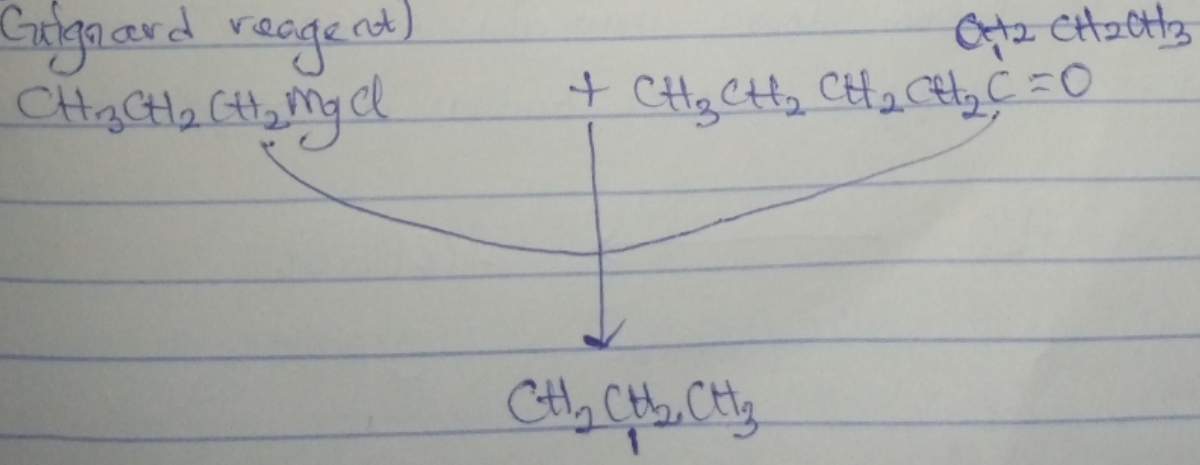
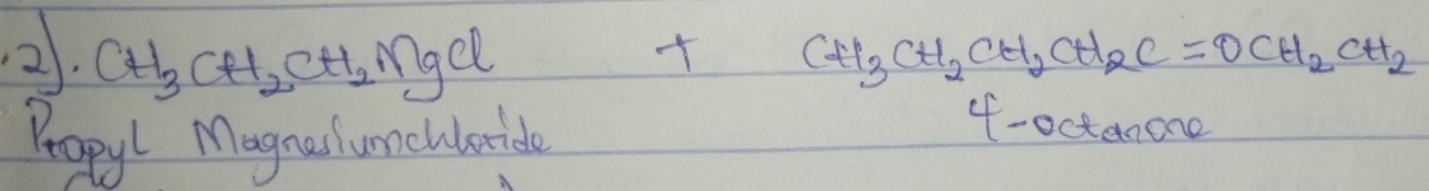
Ibex Chibuzor Grace
Medicine & Surgery
19114501186

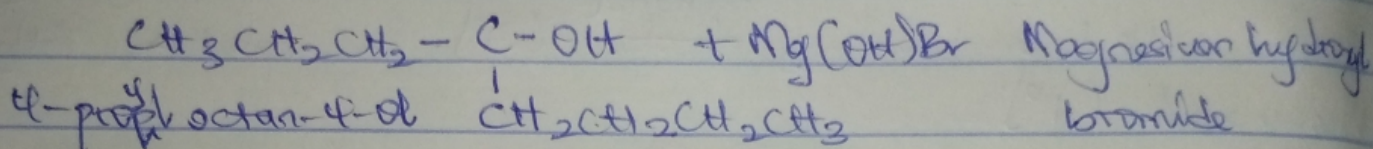
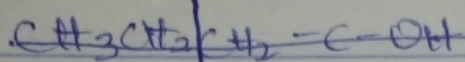
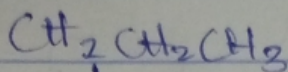
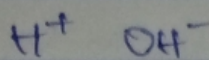
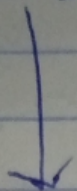
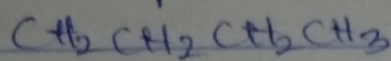
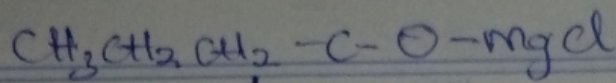
CHEM102 ASSIGNMENT

1) The two major classifications of alkanols are

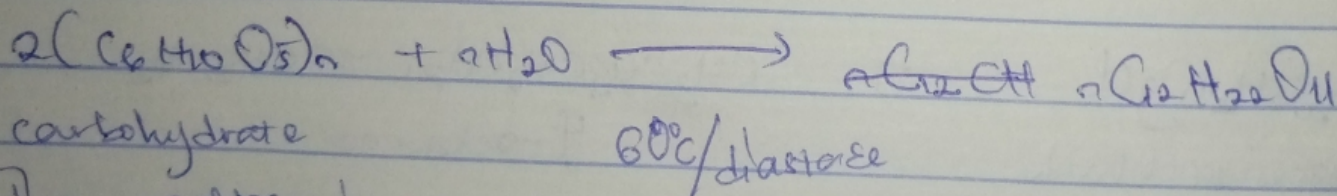
a) This is based on the number of hydrogen atoms attached to the carbon atom containing the hydroxyl group. If the number of hydrogen atoms attached to the carbon atom bearing the hydroxyl group are three or two, it is called a primary alkanol (1°). If it is one hydrogen atom, it is called secondary alkanol (2°) and if no hydrogen atom is attached to the carbon atom bearing the hydroxyl group, it is called a tertiary ~~alcohol~~ alkanol (3°). Examples is C_2H_5OH , Methanol (1°)

b) This is based on the number of hydroxyl groups they possess. Monohydric ~~alcohols~~ alcohols have one hydroxyl group present in the alkanol structure. Dihydric ~~alcohols~~ alcohols are also called glycols ~~and~~ have two hydroxyl groups present in the ~~alcohol~~ alcohol structure while trihydric ~~alcohols~~ alcohols or ~~trials~~ have three hydroxyl groups present in the structure of the ~~alcohol~~ alcohol. Polyhydric ~~alcohols~~ alcohols or polyols have more than three hydroxyl groups. Examples ~~are~~ is $C_2H_4(OH)_2$ Propanol (Monohydric alcohol)

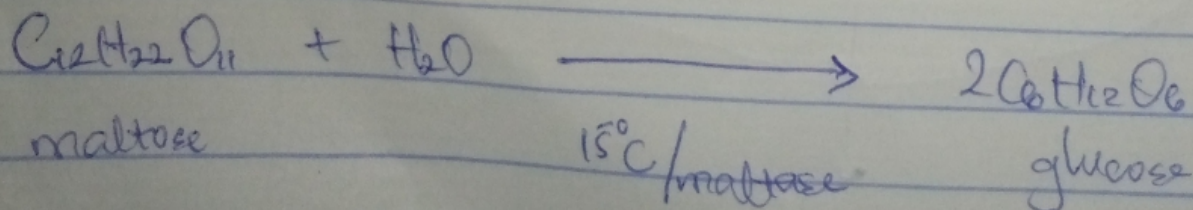




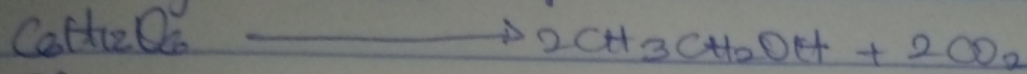
3) Carbohydrates such as starch are major group of natural compounds that can be made to yield ethanol by the biological process of fermentation. The biological catalysts, enzymes found in yeast break down the carbohydrate molecules into ethanol to give a yield of 75%. The starch containing materials include molasses, potatoes, cereals, etc and on warming with malt to 60°C for a specific period of time are converted into maltose by the enzyme diastase contained in the malt



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



The glucose at constant temperature of 15°C is converted into alcohol by the enzyme zymase contained also in yeast

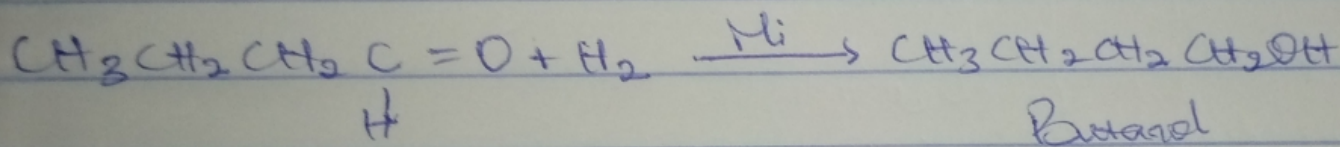


Glucose 15°C / zymase alcohol

4) Alkanoals and alkanones are reduced to primary and secondary alcohol by hydrogenation of carbon-oxygen double bond in the presence of a catalyst such as platinum, nickel, palladium catalyst

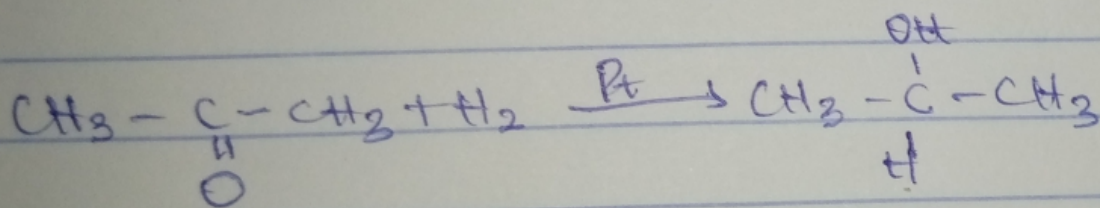
Examples are:-

Reduction of an alkanal yield a primary alkanol



Butanal

Reduction of an alkanone yield a secondary alkanol



~~2-propanol~~

2-propanone

~~2-propanone~~

2-propanol