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MBBS

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Chem 103

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Assignment on Alcohols

They are:

Classification based on the number of hydrogen atom attached to the carbon atom: It is called Primary alcohols when one hydrogen bearing the hydroxyl group is attached to the carbon atom, if two is attached it is called Secondary alcohols and if none is attached it is called tertiary alcohol.

Examples Ethanol - C_2H_5OH
Methanol - CH_3OH

Classification based on the number of hydroxyl group: In this classification, there are monohydric, dihydric, trihydric and polyhydric alcohols. Monohydric has one hydroxyl group, Dihydric has two and trihydric has three. Polyhydric contain more than three hydroxyl group.

Examples: Ethanol-1,2 diol (Dihydric alcohol) $OHCH_2CH_2OH$
Butanol - $CH_3CH_2CH_2CH_2OH$ (Monohydric alcohol)

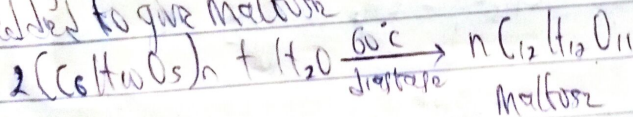
2 Solubility of Alcohols

Lower alcohols with up to three carbon atoms in their molecules are soluble in water. This is due to the ability to form hydrogen bond with water molecules. On the other hand, alcohols are more soluble in organic solvents, which is non-polar as the alcohol it's self. Solubility increases with increasing molecular mass.

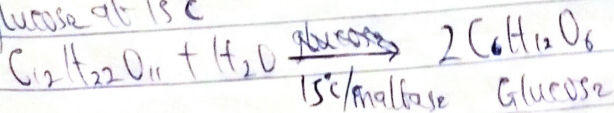
3 Industrial Preparation of Ethanol

It is prepared by fermenting polysaccharides e.g. starche using enzymes and at a reduced temperature.

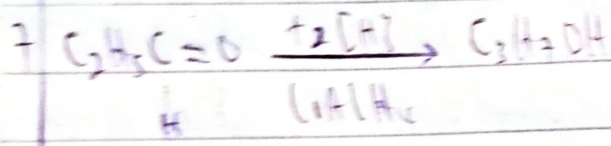
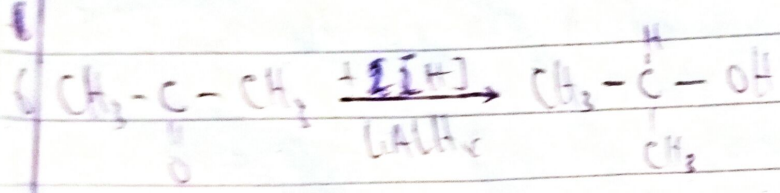
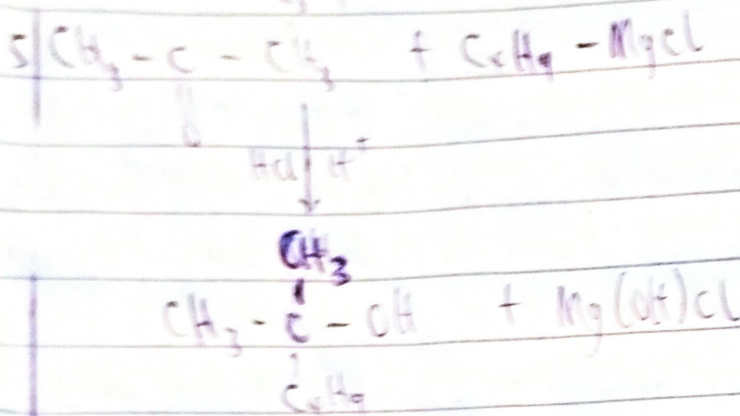
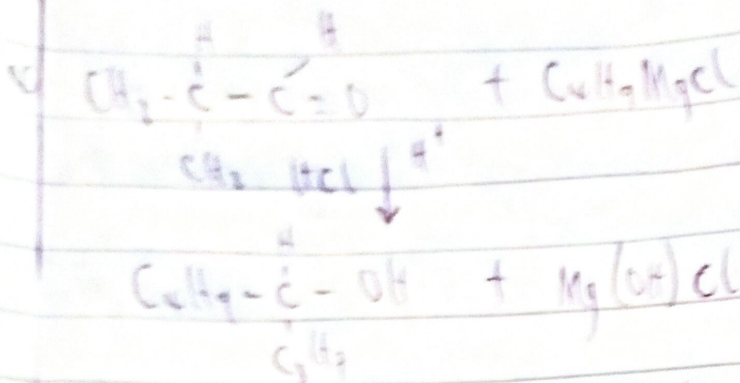
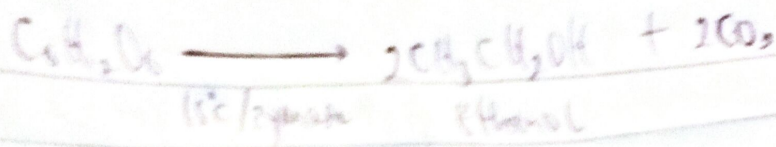
Firstly, it is boiled to a temperature of $60^\circ C$ and malt (containing diastase) is added to give maltose.



On addition of yeast containing maltase, maltose is broken down to give glucose at $15^\circ C$



Finally, Glucose is converted to ethanol on addition of yeast containing zymase at $15^\circ C$



8 Conversion of propan-1-ol to propan-2-ol

This is done by dehydration

