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Course: CHM 102

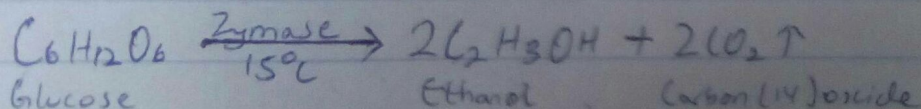
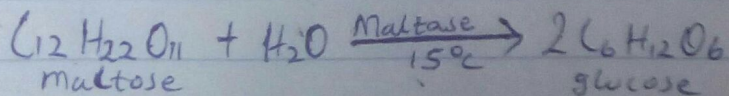
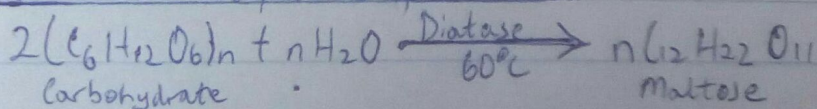
Department: Medicine and Surgery

Matric No: 19/MH501/343

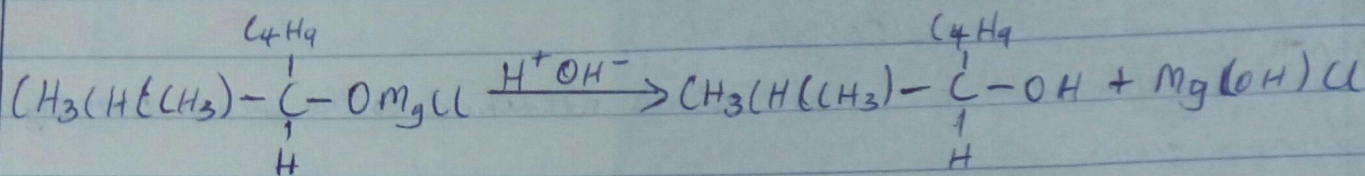
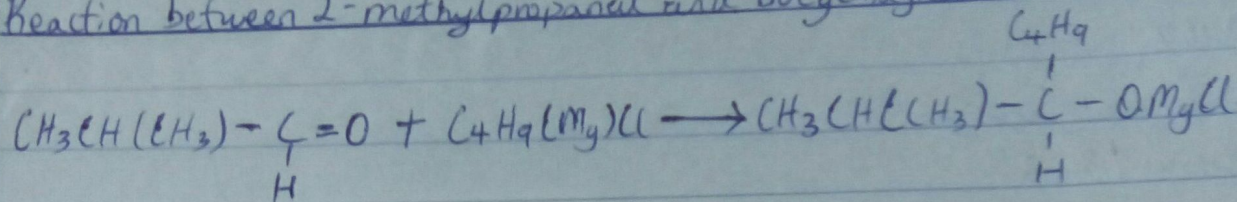
Assignment

- (1) Based on the number of hydrogen atoms attached to the carbon carrying the OH functional group.
- (i) Primary Alcohol (1°) :- If the hydrogen attached to the carbon carrying the OH functional group is 2 or 3 then it is a primary alcohol e.g. $\text{CH}_3\text{CH}_2\text{OH}$ (Ethanol)
 - (ii) Secondary Alcohol (2°) :- If the hydrogen attached to the carbon carrying the OH functional group is 1 then it is a secondary alcohol e.g. $\text{CH}_3\text{CHOHCH}_3$ (Propan-2-ol)
 - (iii) Tertiary Alcohol (3°) :- If ^{there is no} ~~the~~ hydrogen attached to the carbon carrying the OH functional group then it is a tertiary alcohol e.g. $(\text{CH}_3)_3\text{COH}$ (2-Methyl Propan-2-ol)
- (2) Based on the number of OH functional group present in the structure of the alcohol.
- (i) Monohydric Alcohol :- If there is only one OH functional group present in the structure of the alcohol e.g. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ (Propanol)
 - (ii) Dihydric Alcohol :- If there are two OH functional groups present in the structure of the alcohol e.g. $\text{CH}_2\text{OHCH}_2\text{OH}$ (Ethane-1,2-diol)
 - (iii) Trihydric Alcohol :- If there are 3 ~~or more than 3~~ OH functional groups present in the structure of the alcohol e.g. $\text{CH}_2\text{OHCHOHCH}_2\text{OH}$ (Propan-1,2,3-triol)
- (3) Alcohols especially those with 3 and less numbers of carbon atoms in their structure are soluble in water because they can form hydrogen bonds with the molecules of water. Also, all monohydric alcohols are soluble in organic solvents.

(3) Industrial Manufacture of Ethanol



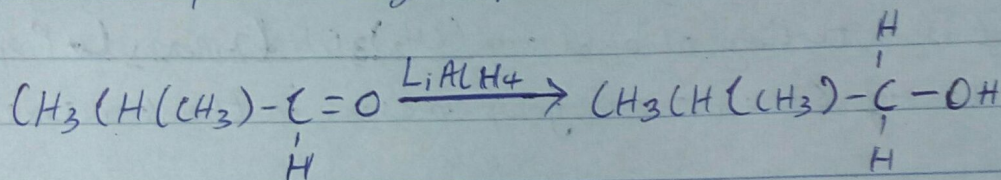
④ Reaction between 2-methylpropanal and butylmagnesium chloride:



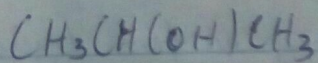
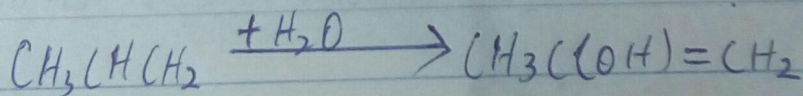
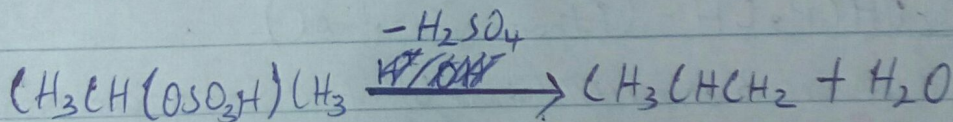
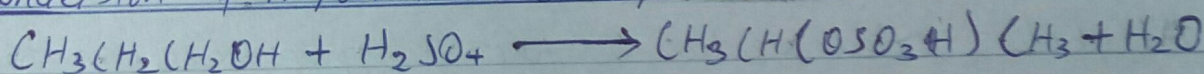
2-methyl heptan-3-ol

* Questions 5 and 6 are not correct

⑦ Production of 2-methylpropanal



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



Propan-2-ol