

MABBS 19/MHS01/235 LEBILE CELENE MOTUNROHA

CHEMISTRY 102 ASSIGNMENT THREE (3)

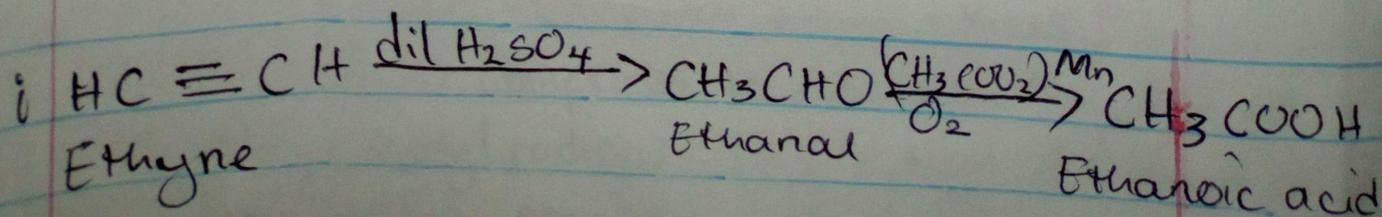
- 1) a) HCOOH - Methanoic acid
- b) $\text{HOOCCH}_2\text{CH}_2\text{CH}_2\text{COOH}$ - Pentan-1,5, dioic acid
- c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$ - Butanoic acid
- d) $\text{HO}_2\text{C}-\text{CO}_2\text{H}$ - Ethanedioic acid
- e) $\text{CH}_3(\text{CH}_2)_4\text{COOH}$ - Hexanoic acid
- f) $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CH}_2\text{COOH}$ - Hex-4-eneoic acid

2) Physical appearance:- Simple aliphatic carboxylic acids up to C_{10} are liquids at room temperature, while others are solid. Anhydrous carboxylic acids freezes to an ice-like solid below room temperature.

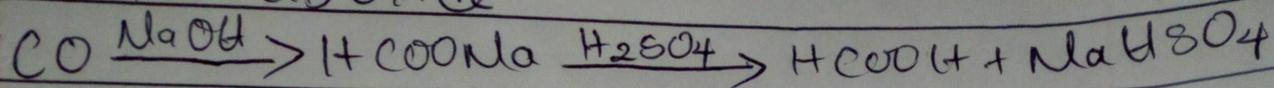
ii) Boiling point:- It increases with increase in relative molecular mass. Aromatic carboxylic acids have higher melting points than Aliphatic.

iii) Solubility:- The acids with low molecular mass with up to four C-atoms in their molecules are soluble in water. Solubility decreases as the molecular mass increases.

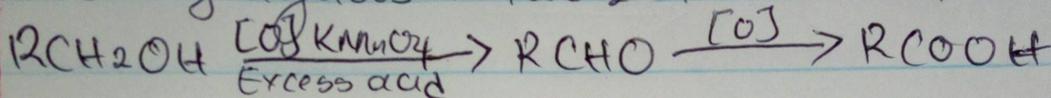
3 From Ethanol



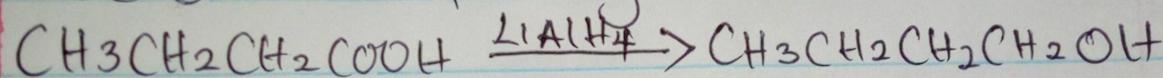
W) From Carbon (I) oxide



4 Oxidation of primary alcohols and aldehydes
oxidation of primary alcohols and aldehydes can be used to prepare carboxylic acids using the usual oxidizing agents i.e. $\text{K}_2\text{Cr}_2\text{O}_7$ or KMnO_4 in acidic solution



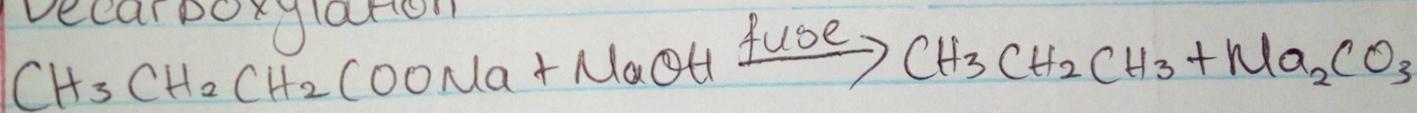
5 Reduction to primary alcohol



Butanoic acid

Butanol

ii) Decarboxylation



iii) Esterification

