

Name: Anuge Enoli Vanessa

Matric Number: 191MTHSO1/096

Department: MBBS

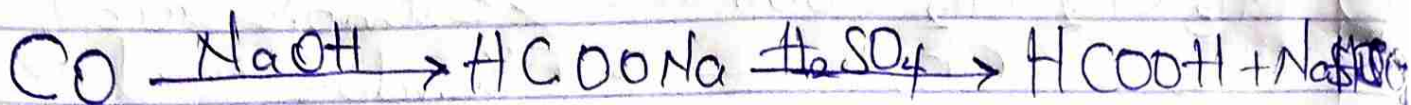
- a) $\text{HCOOH} \rightarrow$ Methanoic Acid
- b) $\text{HOOCCH}_2\text{CH}_2\text{CH}_2\text{COOH} \rightarrow$ Pentan 1,5-dioic acid
- c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH} \rightarrow$ Butanoic acid
- d) $\text{HO}_2\text{C}-\text{CO}_2\text{H} \rightarrow$ Ethanedioic acid
- e) $\text{CH}_3(\text{CCH}_2)_4\text{COOH}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

2 ~~Def~~ Physical Appearance: All simple aliphatic Carboxylic acids up to C_{10} are liquids at room temperature. Most other Carboxylic acids are solid at room temperature although anhydrous Carboxylic acid (Acetic acid) also known as glacial ethanoic acid freezes to an ice-like solid below the room temperature.

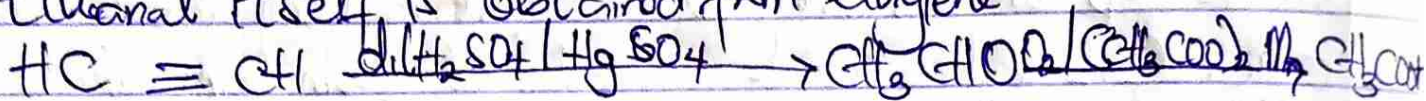
Boiling Points: It increases with increasing relative molecular mass. Aromatic Carboxylic acids are crystalline solids and have higher melting points than their aliphatic counterparts of comparable relative molecular mass.

Solubility: Lower molecular mass Carboxylic acids with up to four Carbon atoms in their molecules are soluble in water. This is largely due to their ability to form hydrogen bonds with water molecules.

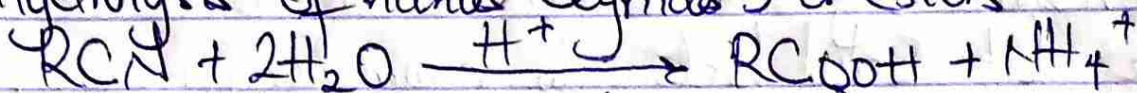
3 From Carbon(II) oxide: Methanoic acid (formic acid) is manufactured by adding Carbon(II) oxide under pressure to hot aqueous solution of hydroxide. The free carbonyl i.e. acid is liberated by careful reaction with tetraoxosulphur(VI) acid (H_2SO_4).



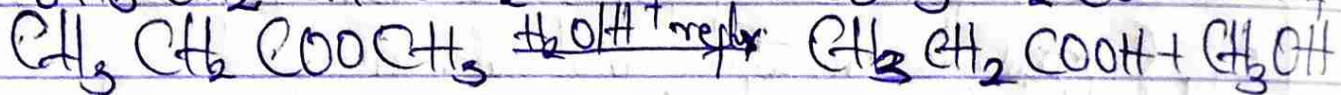
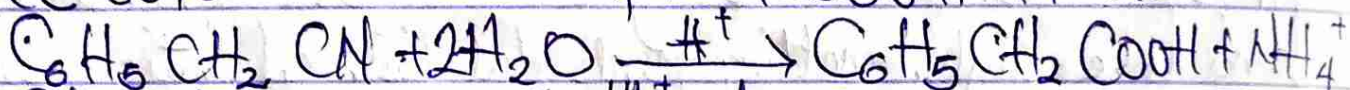
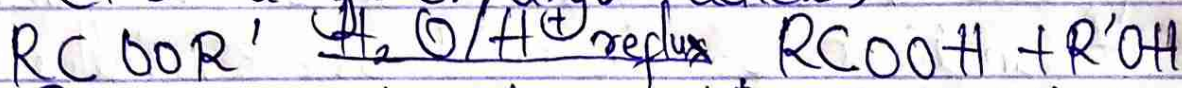
From ethanal: Ethanoic acid is obtained commercially by the liquid phase air-oxidation of 5% solution of ethanal to ethanoic acid using manganate(II) ethanoate catalyst. Ethanal itself is obtained from ethylene



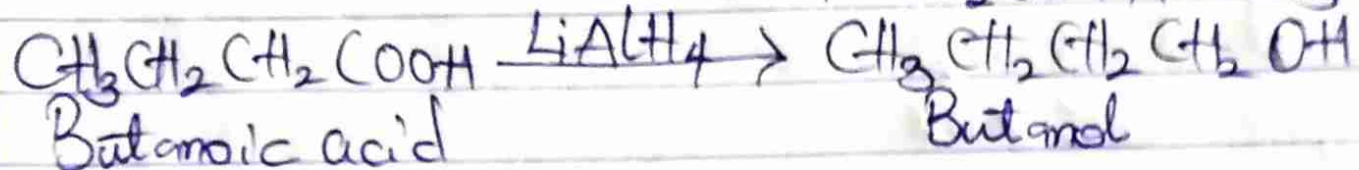
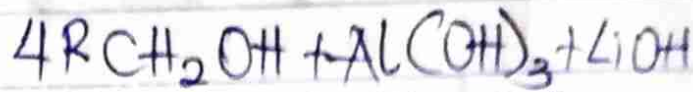
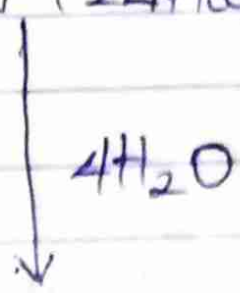
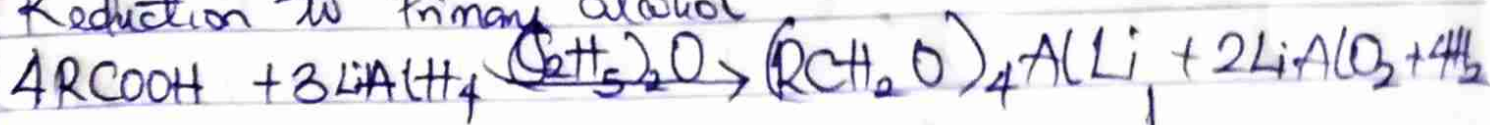
4 Hydrolysis of nitriles (cyanides) or esters



(R = alkyl or aryl radical)



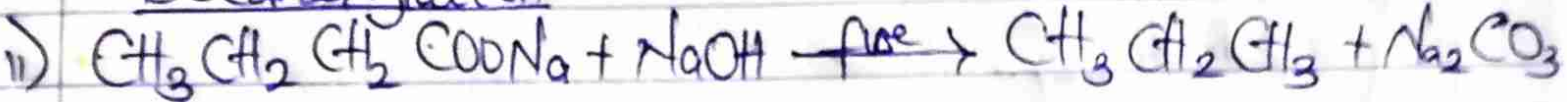
5 Reduction to Primary alcohol



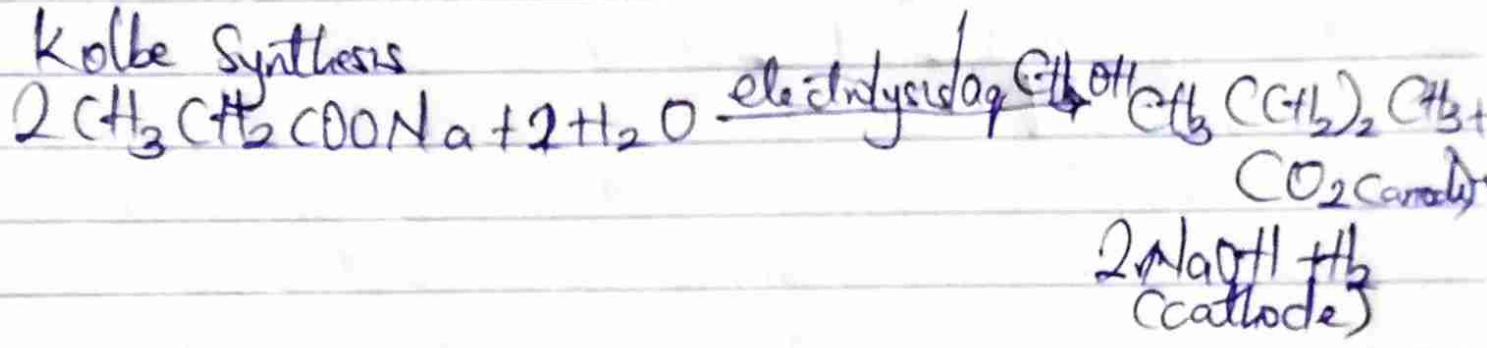
Butanoic acid

Butanol

Decarboxylation



Kolbe Synthesis



Esterification

