

QUESTION 1: IUPAC NAMES OF THE FOLLOWING COMPOUNDS,

a) HCOOH \longrightarrow Methanoic acid

b) $\text{HOOCCH}_2\text{CH}_2\text{CH}_2\text{COOH}$ \longrightarrow Pentan-1,5-dioic acid

c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$ \longrightarrow Butanoic acid

d) $\text{HO}_2\text{C}-\text{CO}_2\text{H}$ \longrightarrow Ethanedioic acid.

e) $\text{CH}_3(\text{CH}_2)_4\text{COOH}$ \longrightarrow Hexanoic acid.

f) $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CH}_2\text{COOH}$ \longrightarrow Hex-4-enoic acid.

2. QUESTION 2. Discuss briefly the Physical Properties of Carboxylic acid.

a. Physical appearance:

All ~~some~~ ^{aliphatic} carboxylic acids up to C_{10} are liquid at room temperature. Most other carboxylic acids are solid at room temp. ^{although anhydrous carboxylic acid (acetic acid) also known as glacial ethanoic acid freezes to a ice-like solid below the room temperature.} ~~most other carboxylic acid~~

b) Boiling Point.

This increases with increase in the relative molecular mass. Aromatic carboxylic acids are crystalline solids and have higher melting point than their aliphatic counterparts of comparable relative molecular mass.

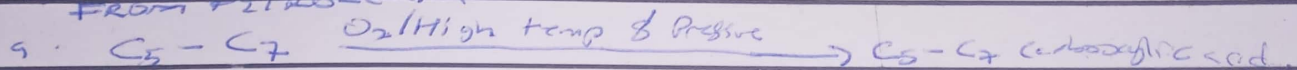
c. SOLUBILITY

Lower molecular mass carboxylic acid with up to four carbons in their molecules are soluble in water.

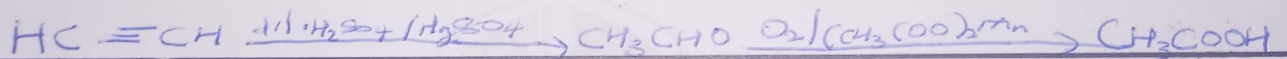
this is largely due to their ability to form hydrogen bonds with water molecules.

QUESTION 3

FROM FITOSOLE

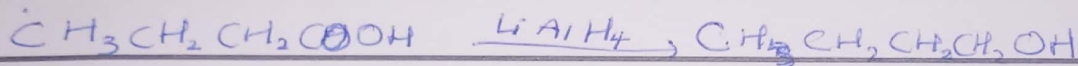
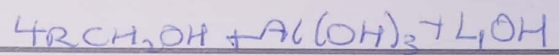
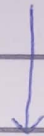
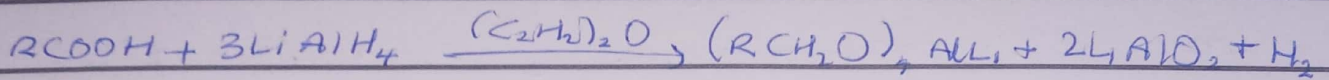


5. from ethanol.



QUESTION 4

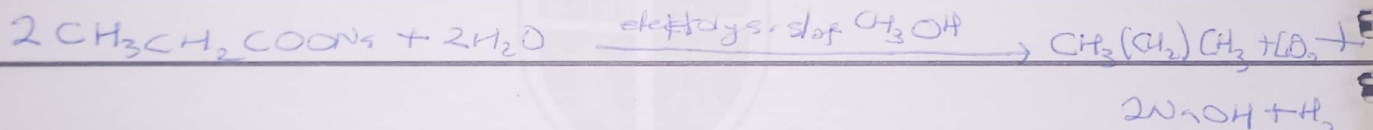
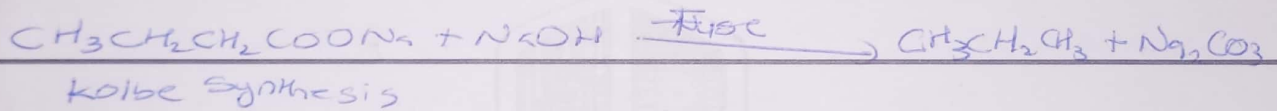
5) Reduction



butanoic acid

butanol

b) Decarboxylation



c) Esterification

