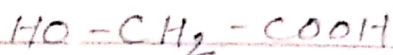


B.Sc. Part II Chemistry Hons.
Paper: III C (Organic Chemistry)
Gr. B.

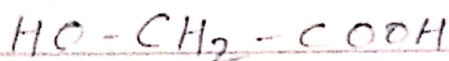
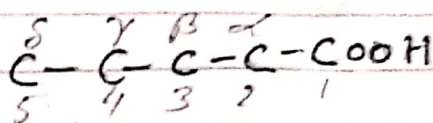
Hydroxy acids (Introduction)

The carboxylic acids in which one or more hydrogen atoms of the hydrocarbon group have been replaced by atoms or groups such as $-OH$ are referred to as Substituted Acids. They are designated as Hydroxy acids.

e.g.

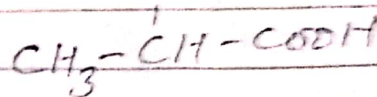


Hydroxy acetic acid.



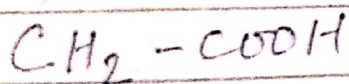
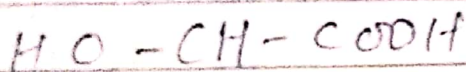
Hydroxy acetic acid
(Glycollic acid)

OH

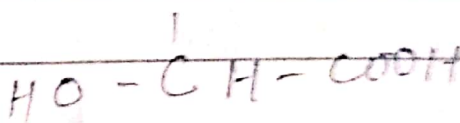


α -Hydroxy propionic acid.

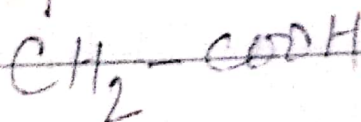
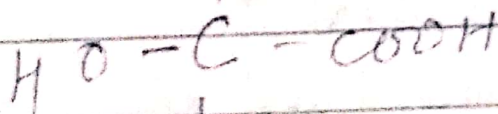
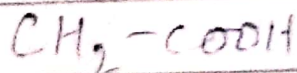
(Lactic acid)



Malic acid.



Tartaric acid.

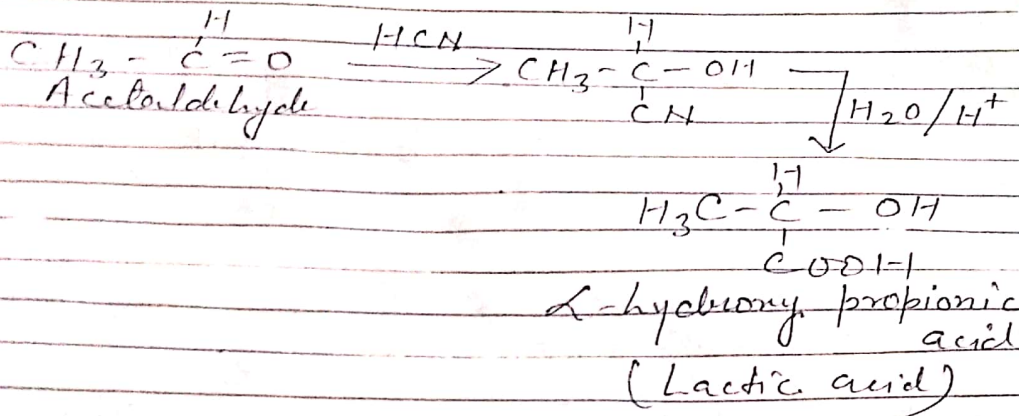


Citric acid.

PREPARATION :

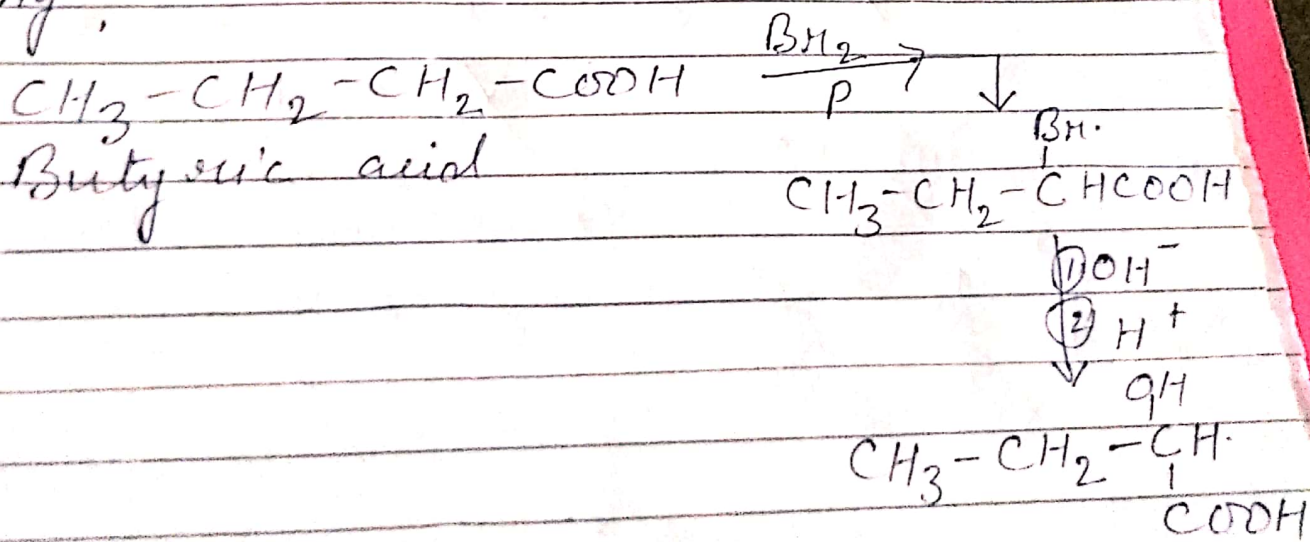
FOR α-HYDROXY ACIDS :

(1) By hydrolysis of cyanohydrins derived from aldehydes or ketones.



(2) By hydrolysis of halo acids with dilute aqueous alkali:

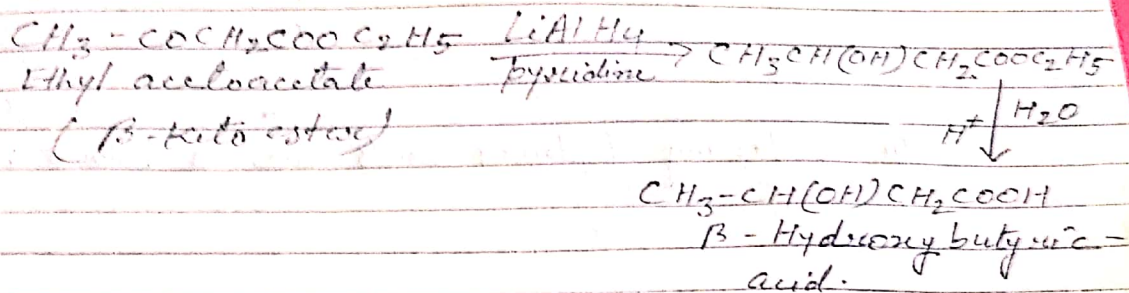
The desired halo acid may be obtained by as a following:



α -hydroxy butyric acid

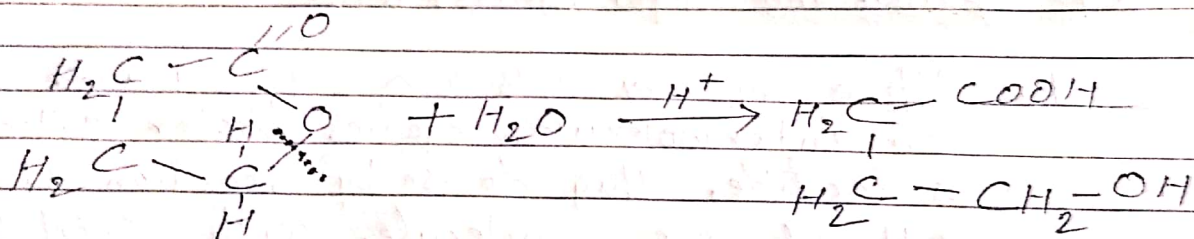
FOR β -HYDROXY ACIDS :

By reduction of β -keto acids or esters with LiAlH_4 in the presence of pyridine.



γ , δ HYDROXY ACIDS :

By Hydrolysis of the corresponding lactone :



PHYSICAL PROPERTIES : —

- (1) The hydroxy acids are colourless crystalline solids or syrupy liquids.
- (2) Their melting and boiling points are much higher than those of the parent unsubstituted acids.

