

SUBJECT - CHEMISTRY

CLASS - B.Sc (Sub/Gen) PART - II

GROUP - C

TOPIC - Hydroxy Acids

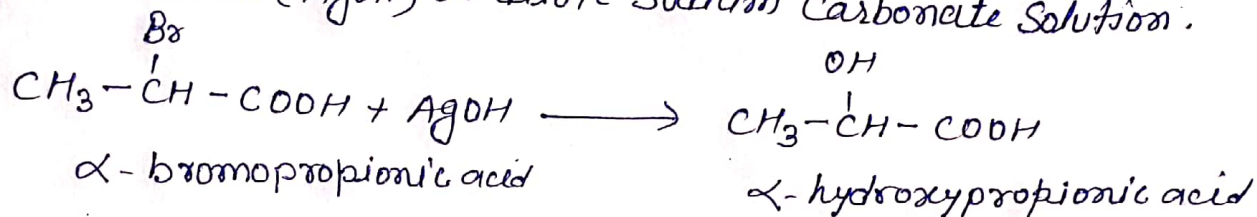
Dr Hari Mohan Prasad Singh

Department of Chemistry

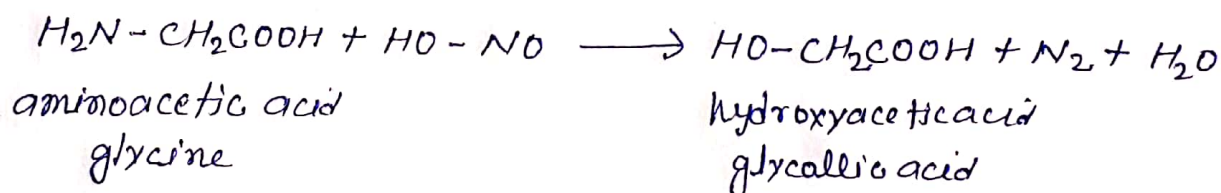
Dr. L.K.V.D College Tarpur Samastipur

## METHODS OF PREPARATION

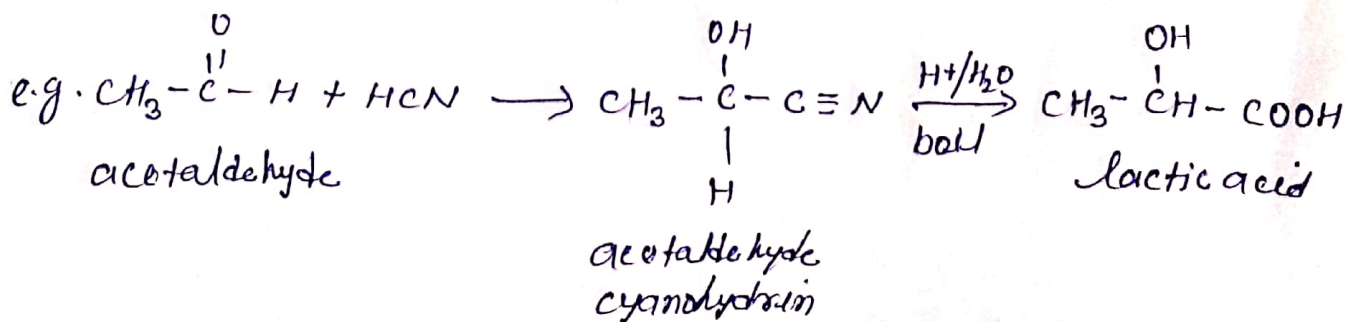
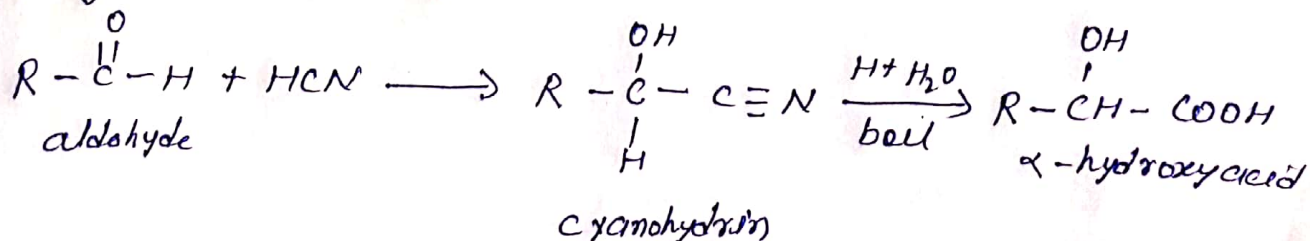
(1) By the hydrolysis of the corresponding halo acid with moist Silver oxide (AgOH) or dilute Sodium Carbonate solution.



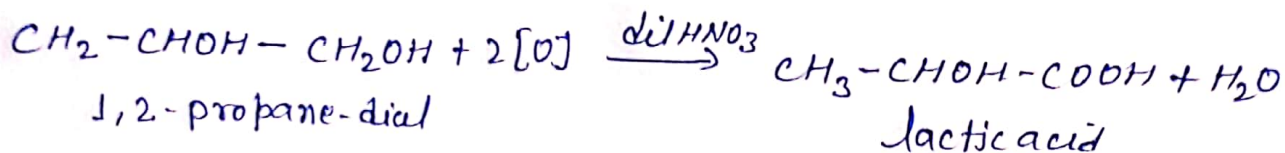
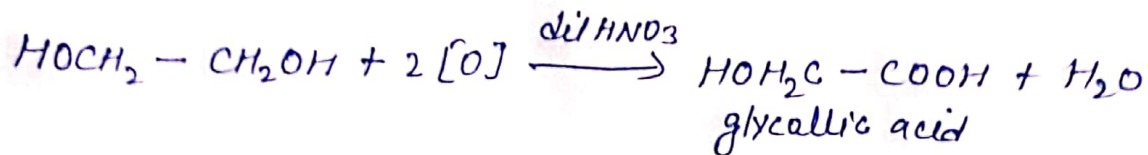
(2) By the action of nitrous acid (Sodium nitrite and dilute mineral acid) on amino acids.



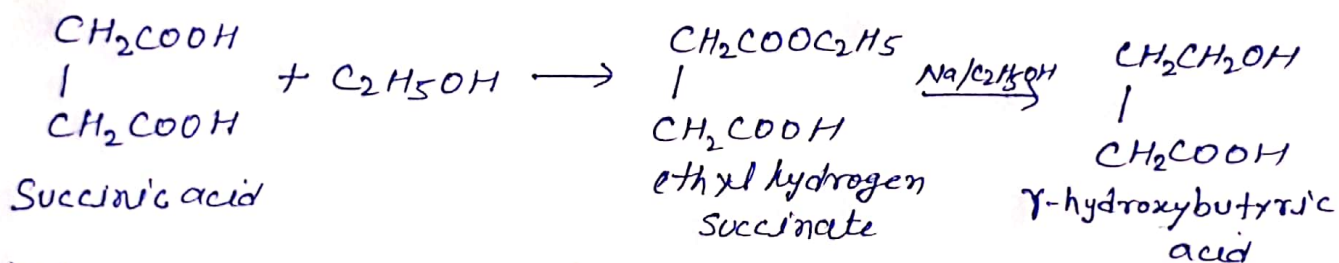
(3)  $\alpha$ -hydroxy acid are best prepared by Cyanohydrin Synthesis. An aldehyde or a ketone is first converted to cyanohydrin by addition of HCN to it. The cyanohydrin is then hydrolysed to give the hydroxy acid.



(4) By the controlled oxidation of glycals with dilute nitric acid. Thus

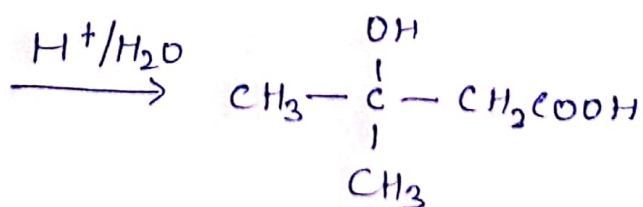
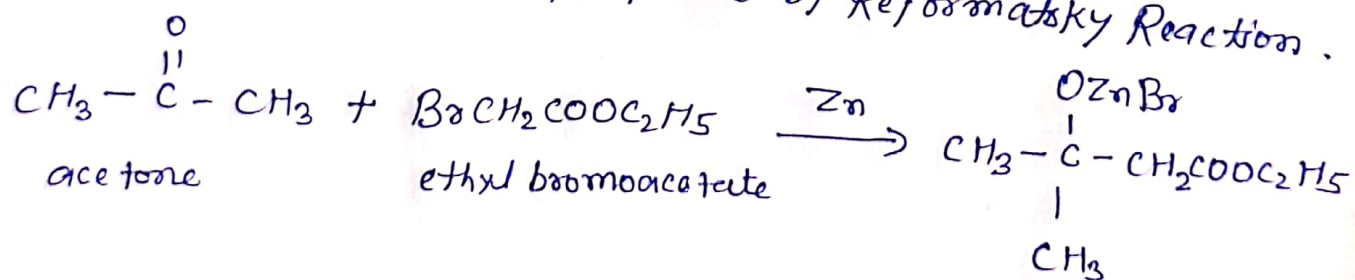


(5) By reduction of the available dicarboxylic acid by the following sequence of reactions.



The reduction of half-esters of dicarboxylic acids is particularly useful for the preparation of  $\gamma$ -hydroxy acids.

(6)  $\beta$ -hydroxy acids can be prepared by Reformatsky Reaction.



$\beta$ -hydroxy- $\beta$ -methylbutanoic acid