IMPORTANT QUESTIONS

(From Previous Year)

For Degree-I (Hons.)

By-Dr.Rinky ,Dept.of Chemistry,13/10/2020

Explain the following :-

a. Acetylene is a Linear molecule.

Ans. Acetylene (C_2H_2)

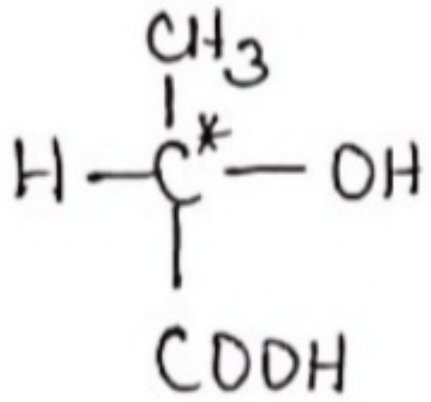
Structure : $H-C\equiv C-H$

Hybridisation of both carbon in acetylene is sp.

In case of acetylene one σ-bond between both carbon is formed by overlapping of sp - sp hybridisation and two π-bond is formed by side by side (colateral) overlapping of two unhybrid p-orbital of both carbon. Since, H-C-C bond angle in sp-hybrid orbital is 180° hence, it is a linear molecule.

b. Lactic acid exhibits optical Isomerism.

Ans.



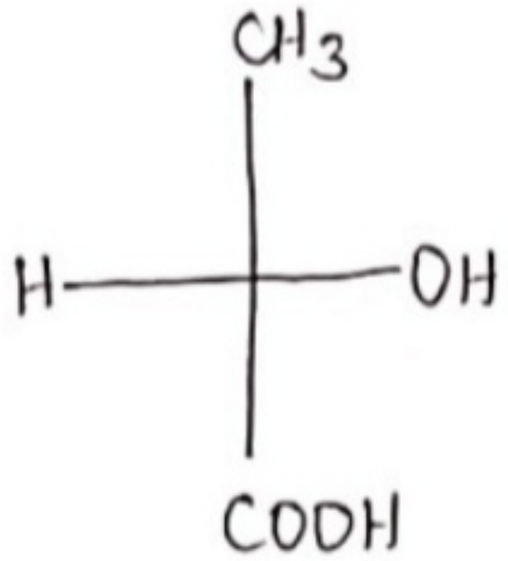
Lactic Acid

* Lactic acid has one chiral Carbon which is star marked in structure.

* We know that the tetrahedral molecule having at least one chiral carbon is known as optically active molecule.

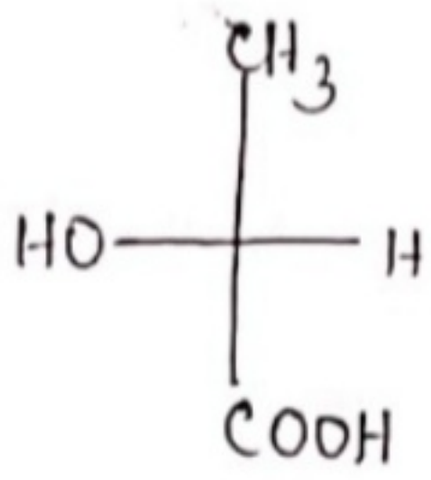
Thus, Lactic acid exhibits optical isomerism due to presence of one chiral carbon.

* The no. of optical isomer of Lactic acid $= 2^1 = 2$
* Out of these two isomers one is dextro rotatory and other is laevo rotatory.



(dextro)

+ Lactic acid



Laevo

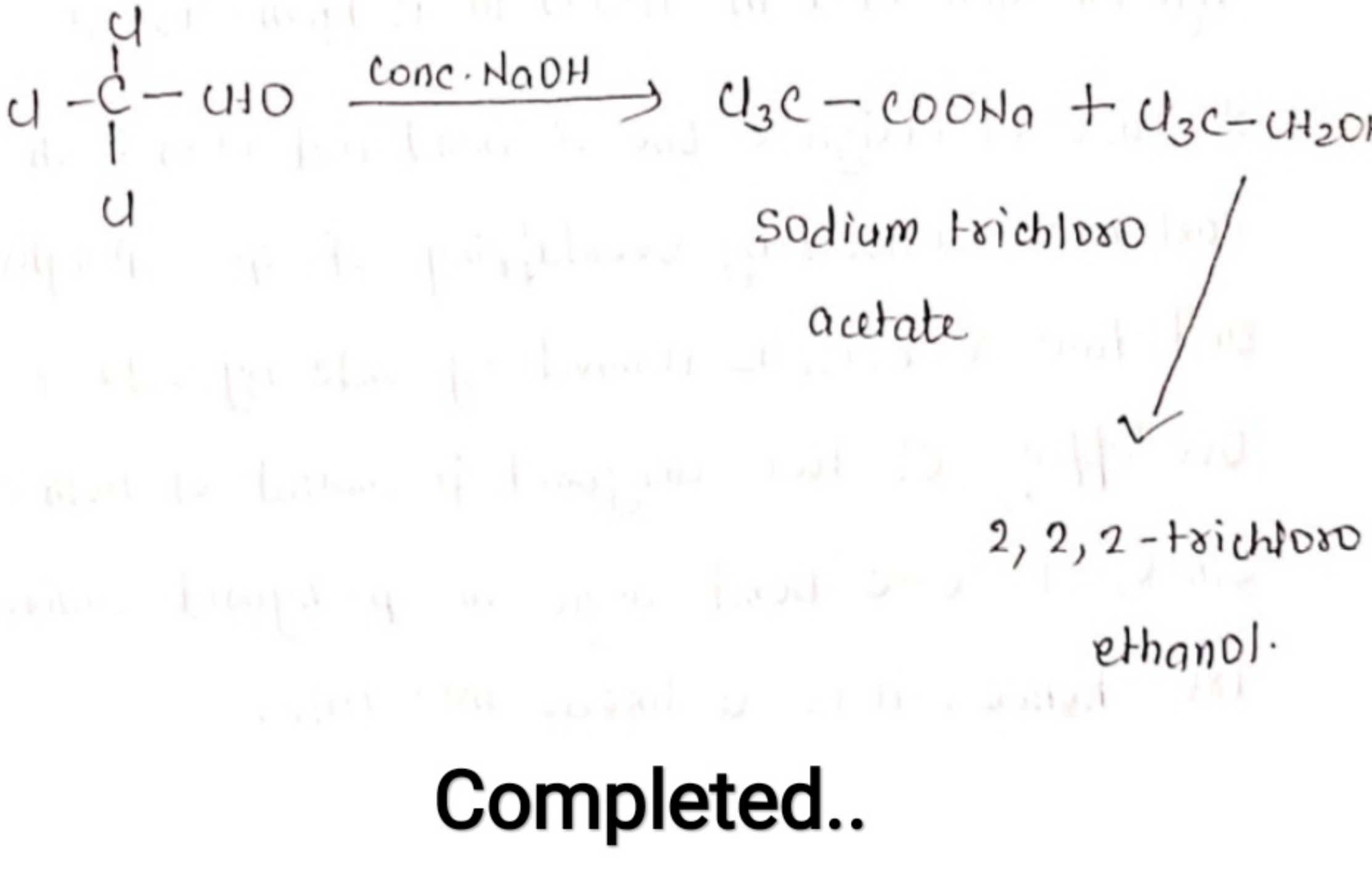
(—) Lactic acid

3.

C. Trichloroacetaldehyde undergoes Cannizzaro Reaction.

Ans. Cannizzaro reaction is given by those aldehyde which don't have any α-hydrogen.

H_3C-CHO also don't have any α-hydrogen, hence show cannizzaro reaction. When trichloro acetaldehyde is subjected to cannizzaro reaction by using conc. NaOH then salt of trichloro acetic acid and 2,2,2-trichloro ethanol will formed.



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