

CARBOXYLIC ACID & DERIVATIVES

27-04-2020

(Lecture -5)

Degee-I

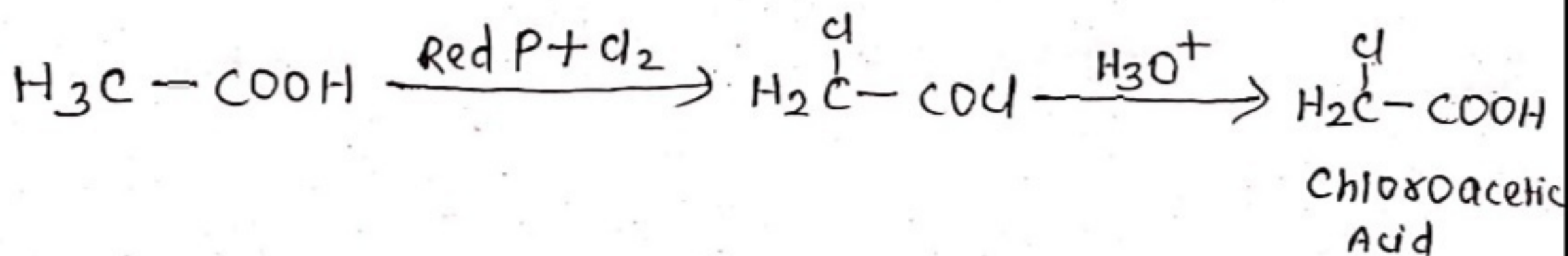
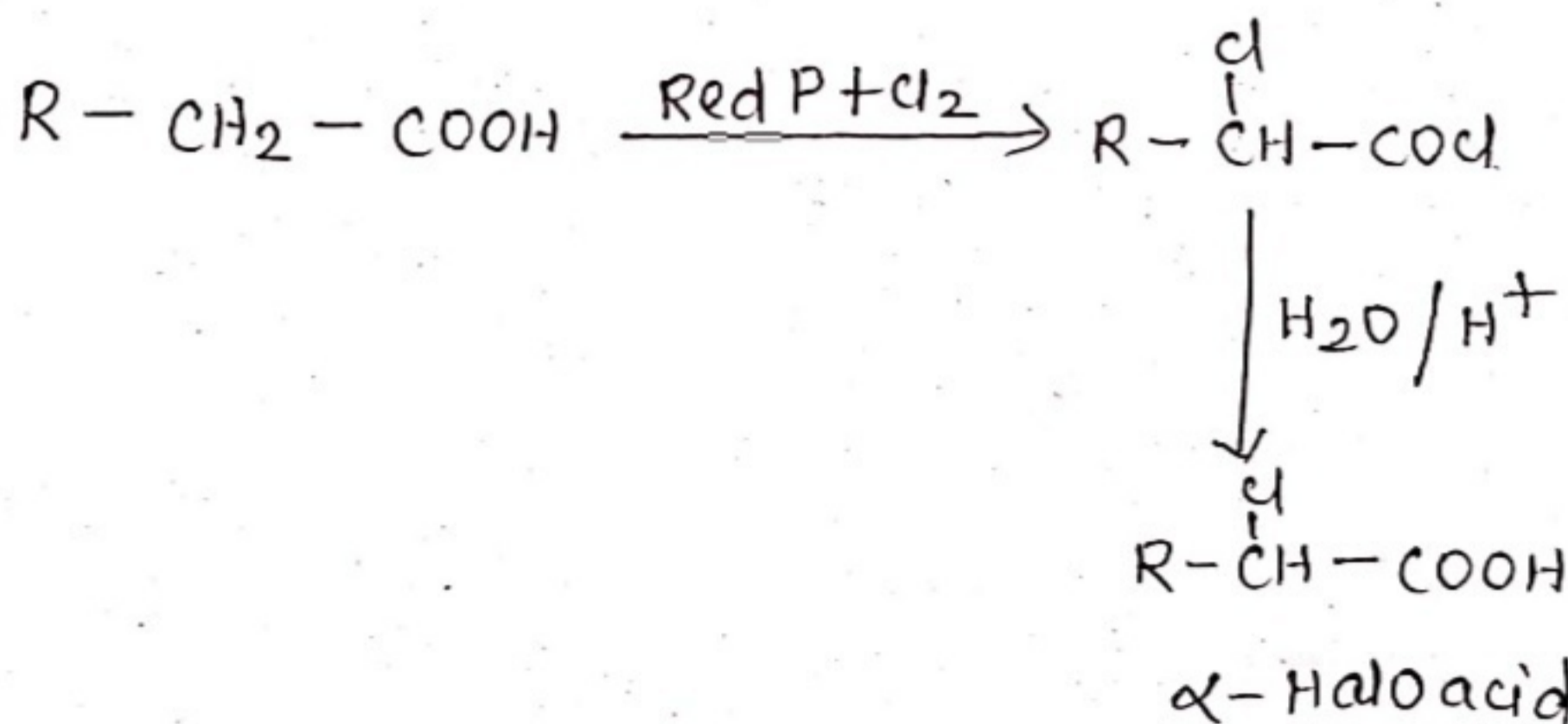
(Hons. & Sub.)

Topic - Hell Volhard Zelinsky Reaction And Decarboxylation of Acid

HELL VOLHARD ZELINSKY REACTION (HVZ Reaction)

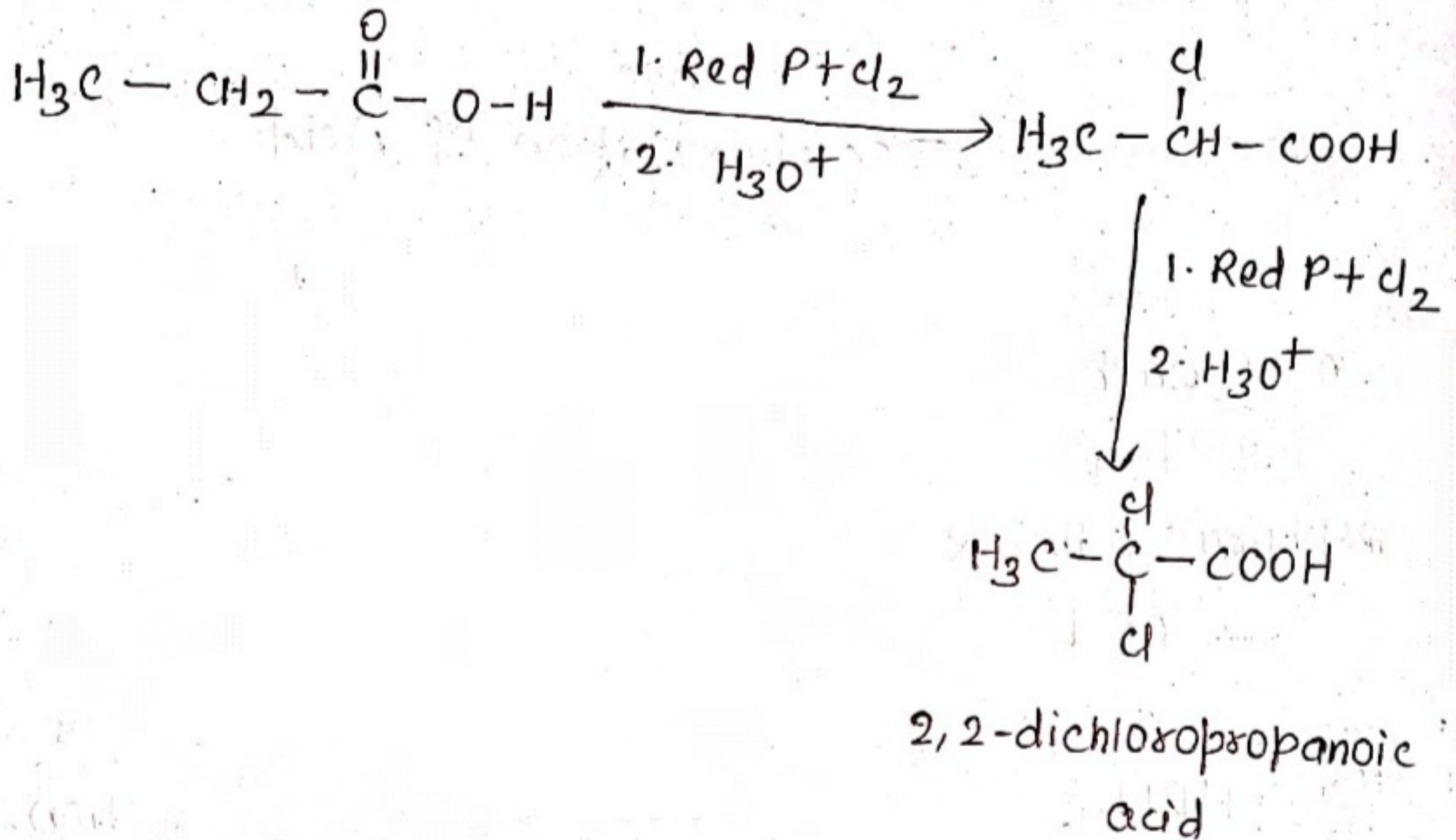
When a carboxylic acid that contains α -hydrogens is treated with Cl_2 or Br_2 in the presence of Red phosphorus, the α -hydrogen atoms are replaced by chlorine, or bromine atoms.

This reaction is known as the HELL VOLHARD ZELINSKY (HVZ) reaction.



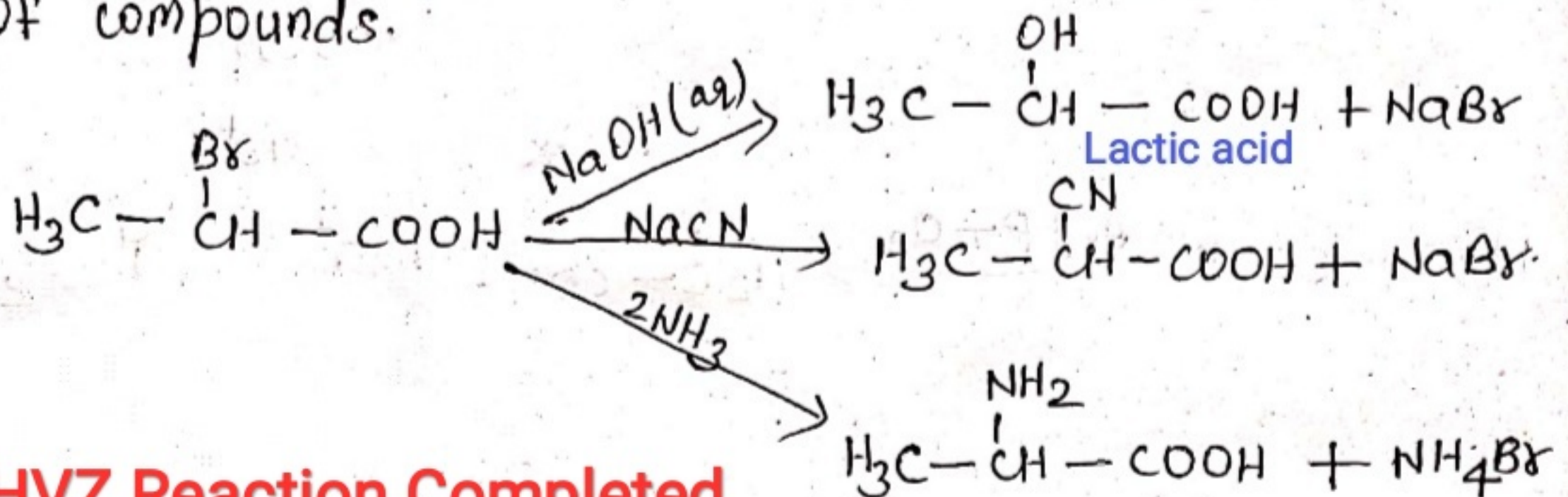
If more than one α -hydrogen is present, it may also be substituted by halogen.

For example;



The degree of substitution can be controlled experimentally, so it is possible to stop the reaction at either the mono or disubstitution stage.

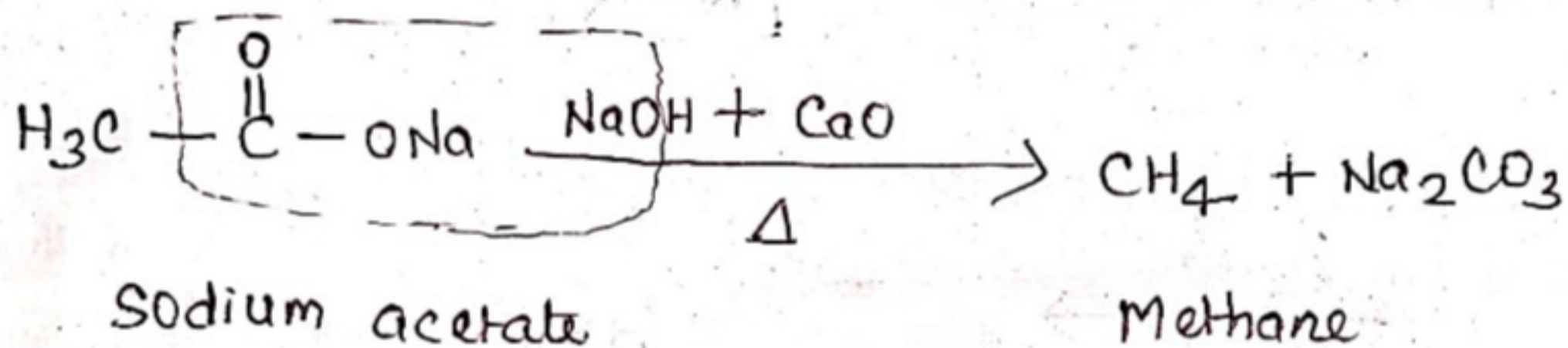
α -Haloacid can be converted into many different types of compounds.



HVZ Reaction Completed..

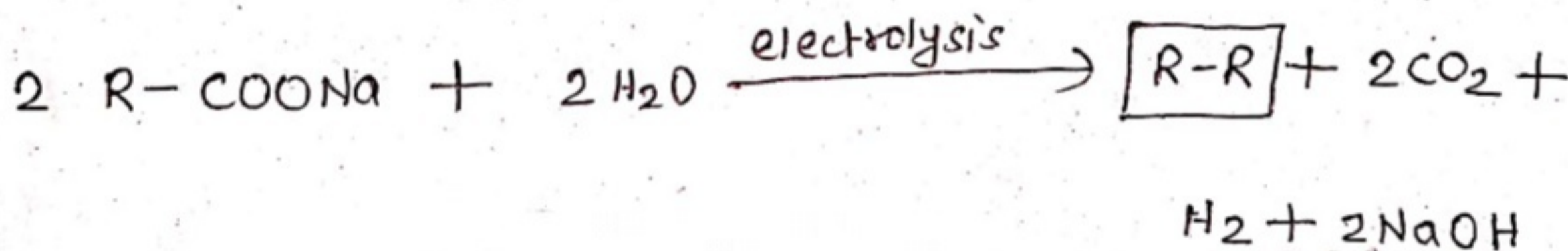
1. Action of Heat on Sodium Salts:

When sodium salt of carboxylic acids are heated with soda-lime ($\text{NaOH} + \text{CaO}$), alkanes are formed.

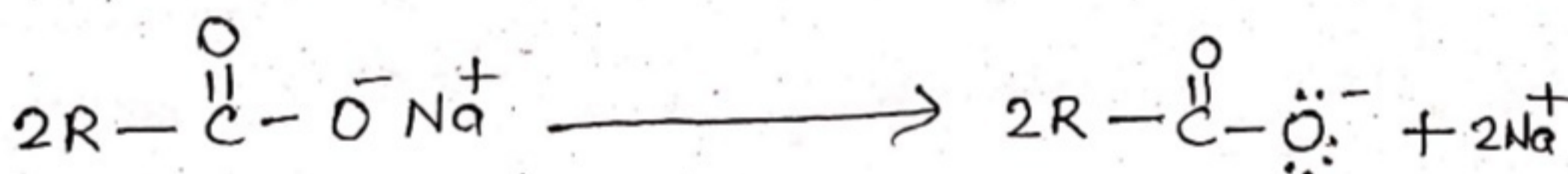


2. Kolbe's Electrolysis :-

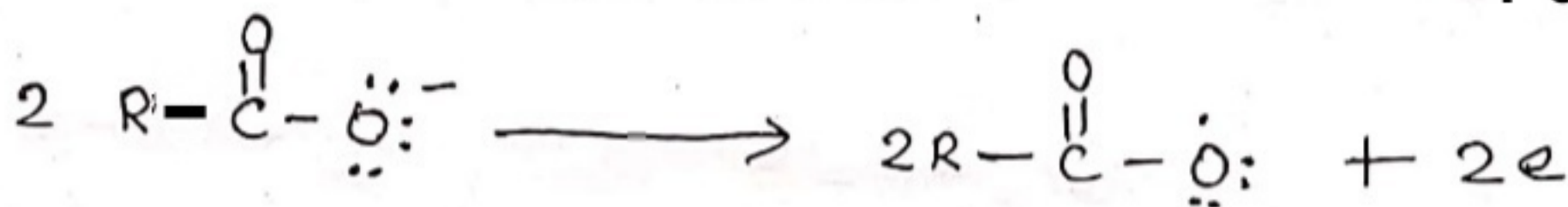
When concentrated aqueous solution of sodium salts of carboxylic acids are electrolysed, alkanes are formed.



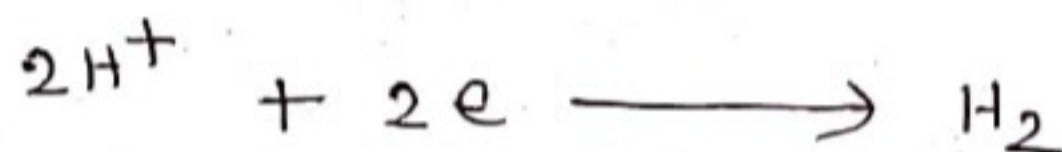
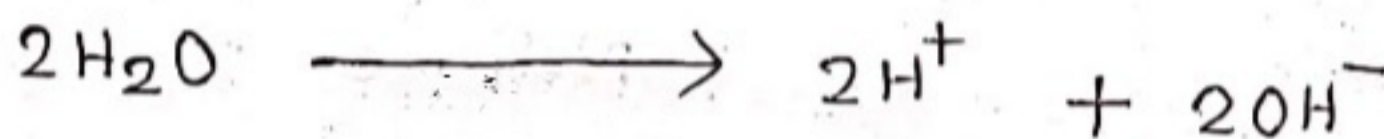
Mechanism



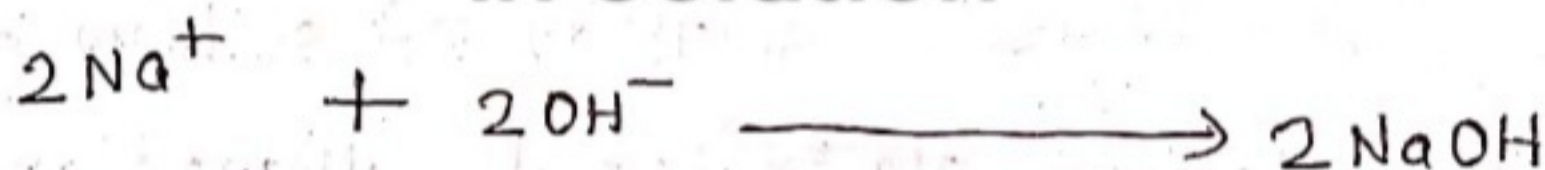
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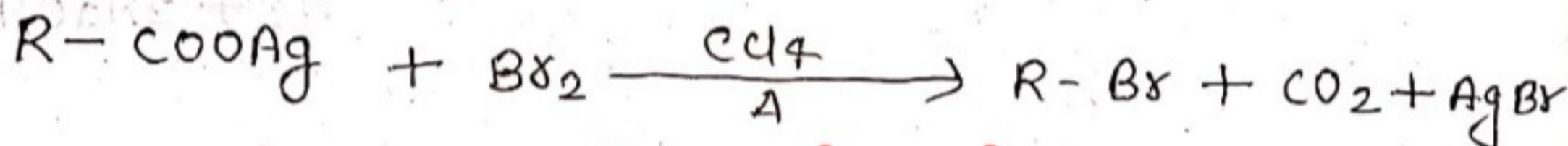
At cathode



In solution



3. Reaction of silver salt with Halogen (HUNSDIECKER REACTION)



~Completed~

Note :- These both Reactions are the part of chemical properties, a/c to syllabus study it separately also.

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