Ethane (C_2H_6)

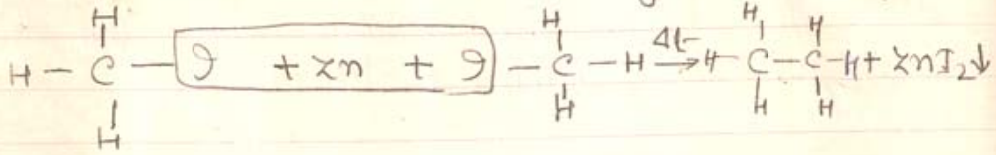
W.H

1. Preparation – When Sodium Propunate is heated with Sodalime we get Ethane

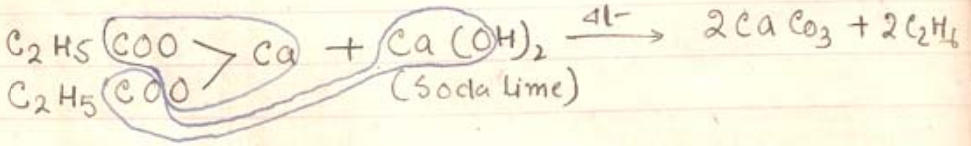
$$C_2H_5COONa + NaOH \xrightarrow{\Delta} Na_2CO_3 + C_2H_6$$

② Frankland reaction

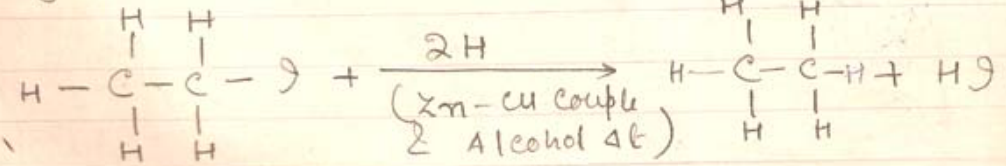
When Methyl Iodide / Methyl halaide is heated with zinc dust in a closed vessle we get Ethane gas



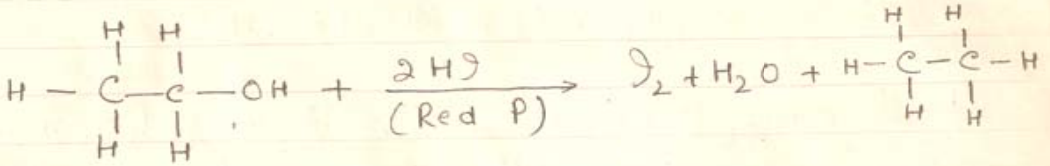
③ When Calcium Propunate is heated with Sodalime we get Ethane



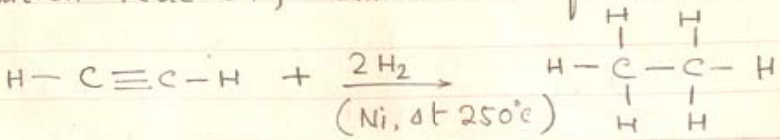
④ When Ethyl Iodide is heated with zinc copper couple and Alcohol, due to nescent hydrogen we get Ethane.



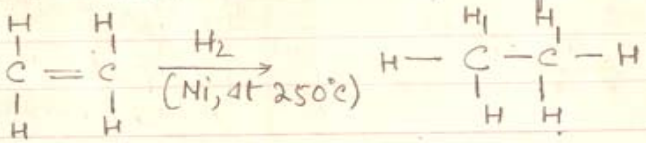
⑤ When Ethyl Alcohol is treated with HI in the presence of red P as a catalist, due to reduction Ethane is formed.



When Acetylene gas is heated with hydrogen, in the presence of nical catalist at 250°C, due to addition reaction, Ethane is formed.

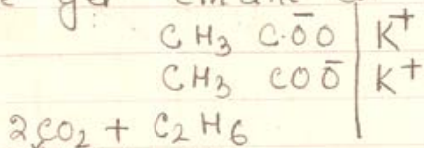


When Ethylene gas is heated with hydrogen in the presence of Ni Catalist 250°C due to addition reaction Ethane is formed



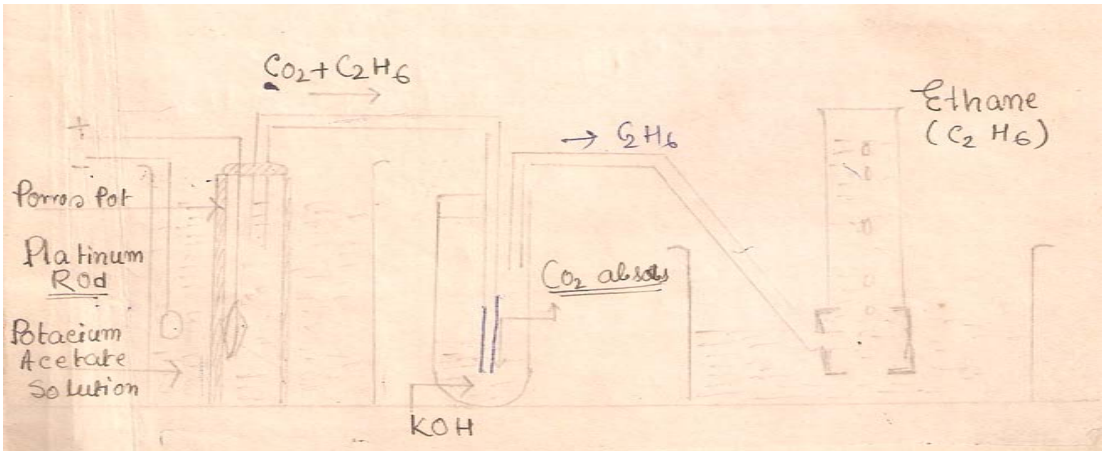
Kolbe's reaction / synthesis

When Potacium Acetate Solution is electrolised we get Ethane at anode



$2K + 2H_2O \rightarrow 2KOH + H_2$

($2CO_2$ absorbed by KOH)

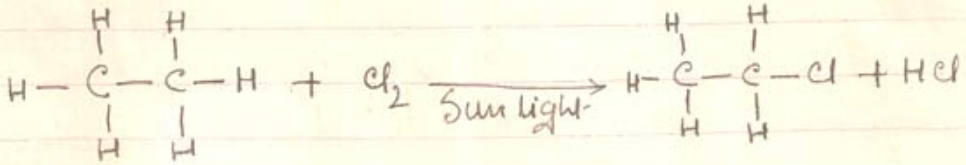


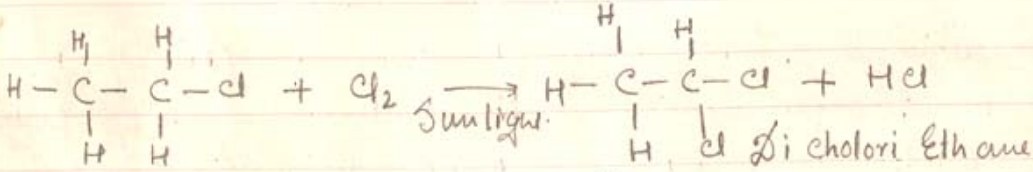
CHEMICAL PROPERTIES:

① Burning / Oxidation – On heating burning it gives a green flame and CO_2 is formed.

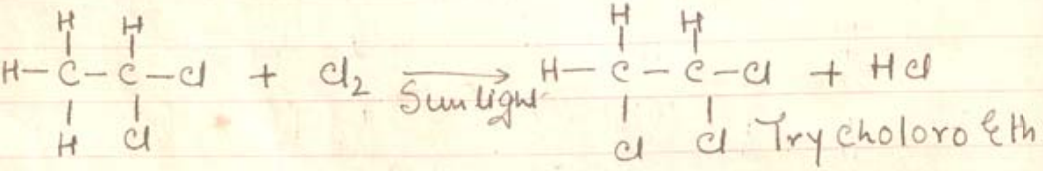
$$2C_2H_6 + 7O_2 \longrightarrow 4CO_2 + 6H_2O$$

② Substitution reaction

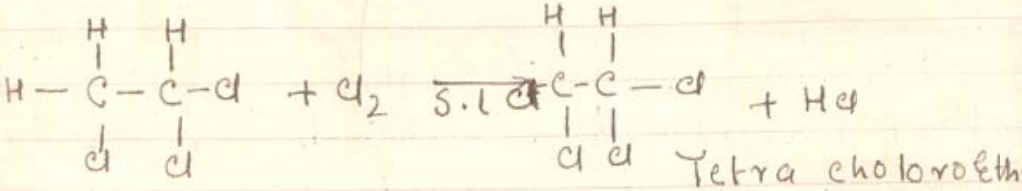
(i) 

(ii) 

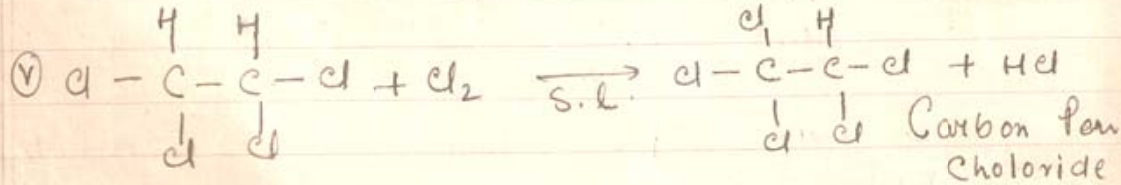
Di cholori Ethane

(iii) 

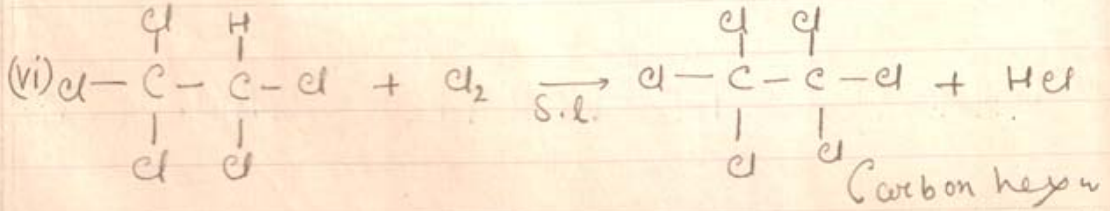
Trycholoro Ethane

(iv) 

Tetra cholorоEthane

(v) 

Carbon Penta Choloride

(vi) 

Carbon hexa choloride