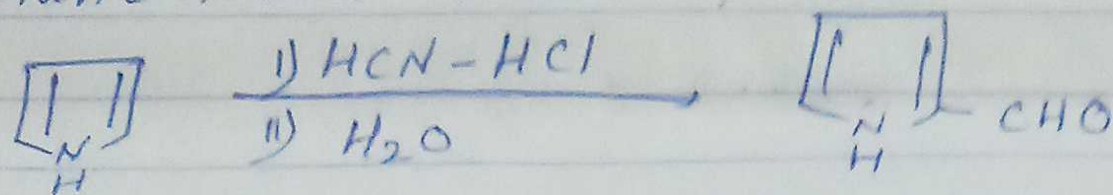
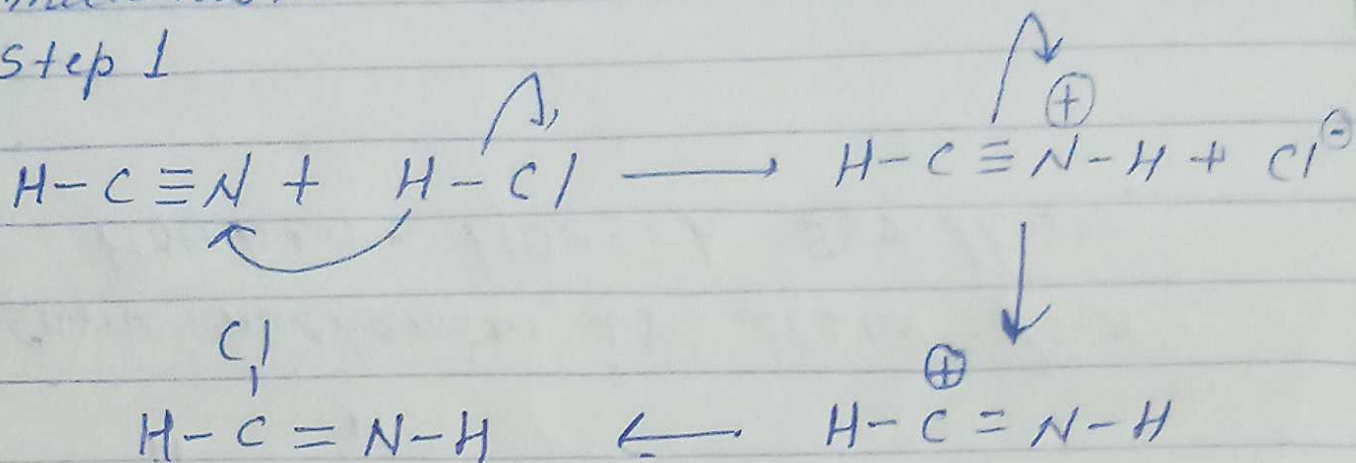


# Grattermann Reaction :-

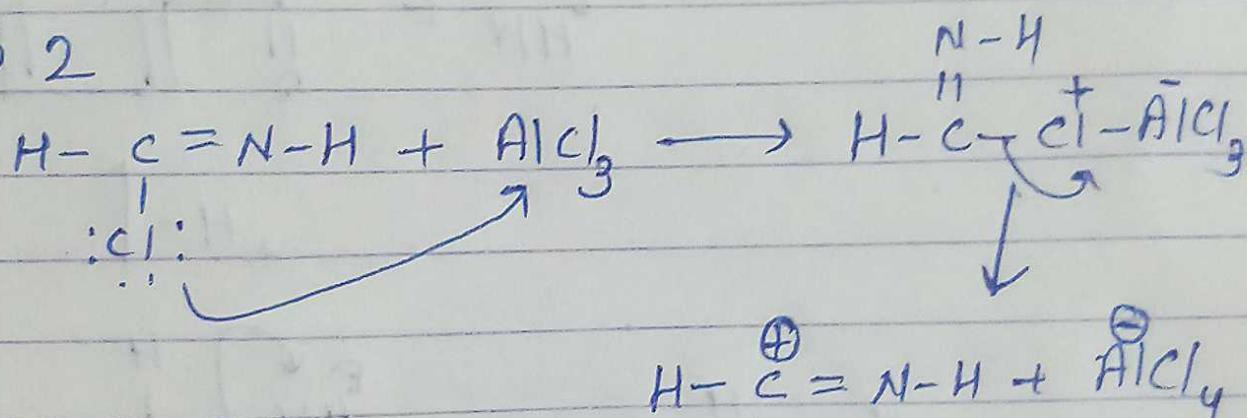


mechanism

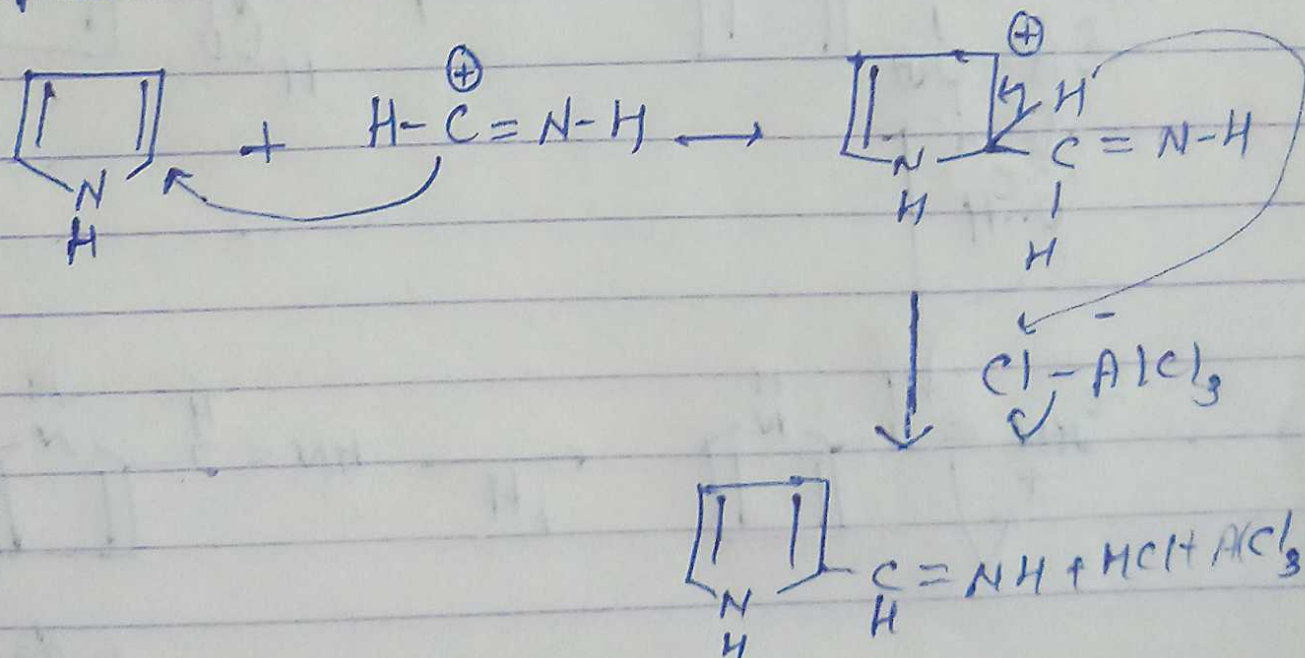
Step 1



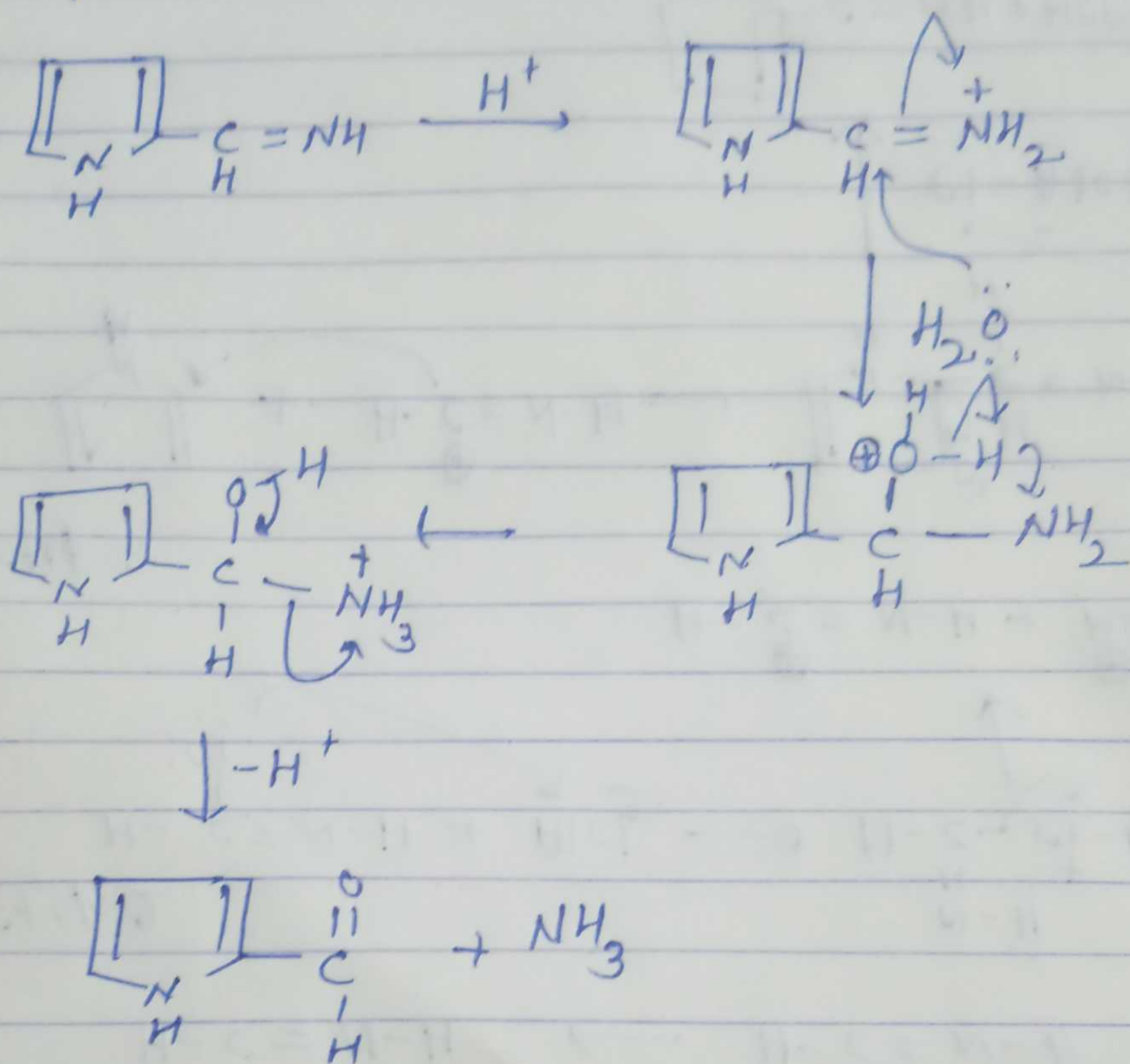
Step 2



Step 3

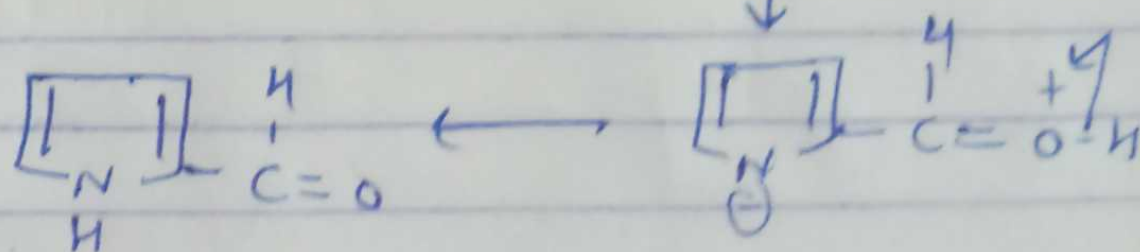
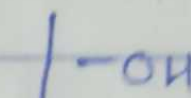
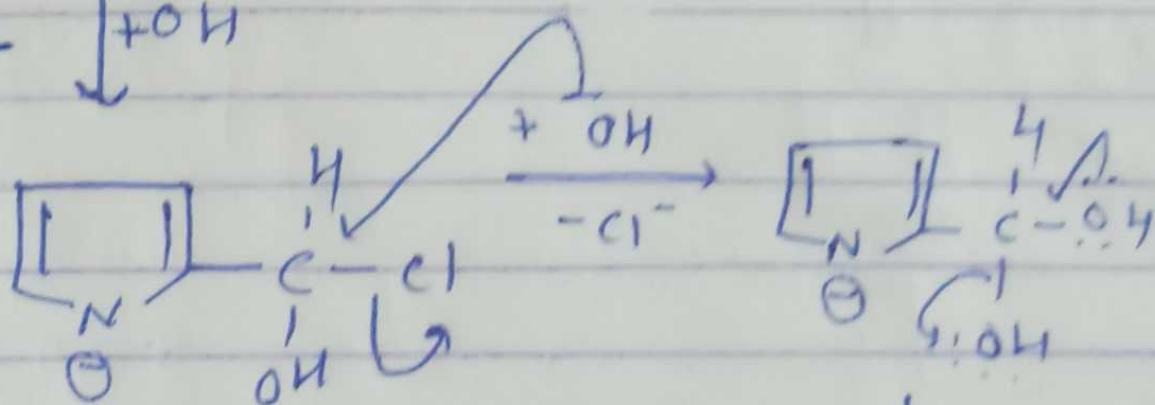
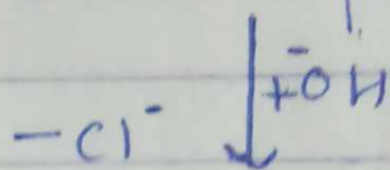
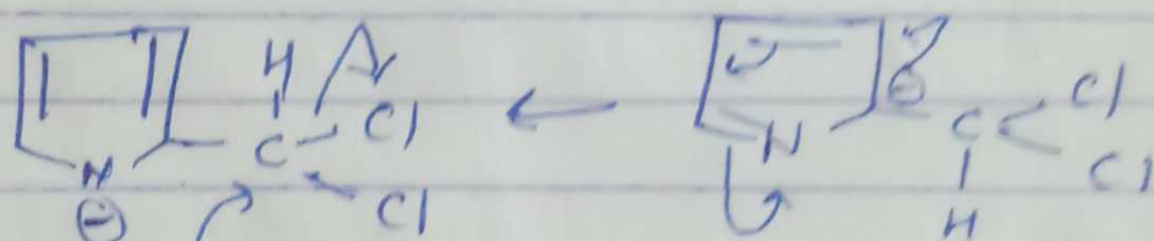
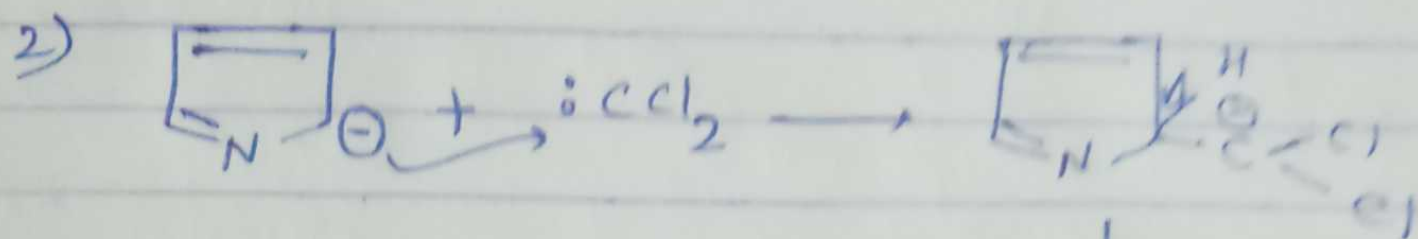
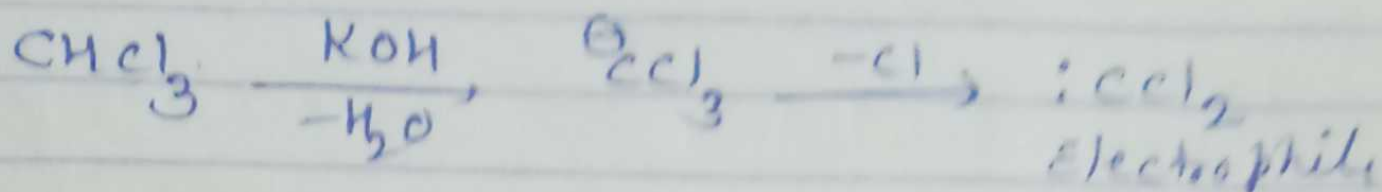
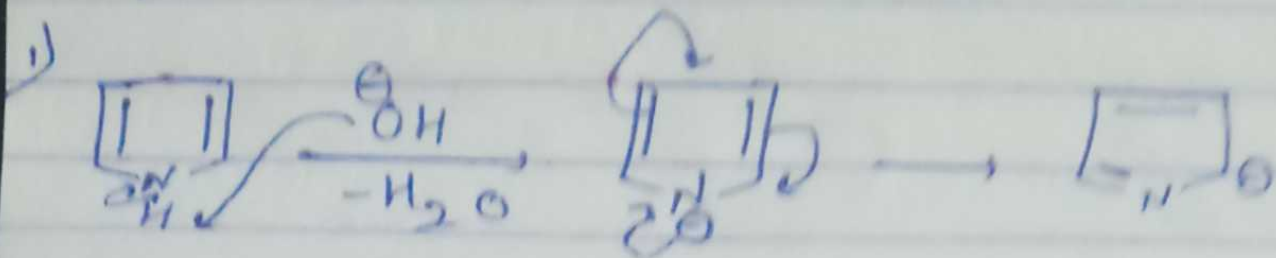


Step 4



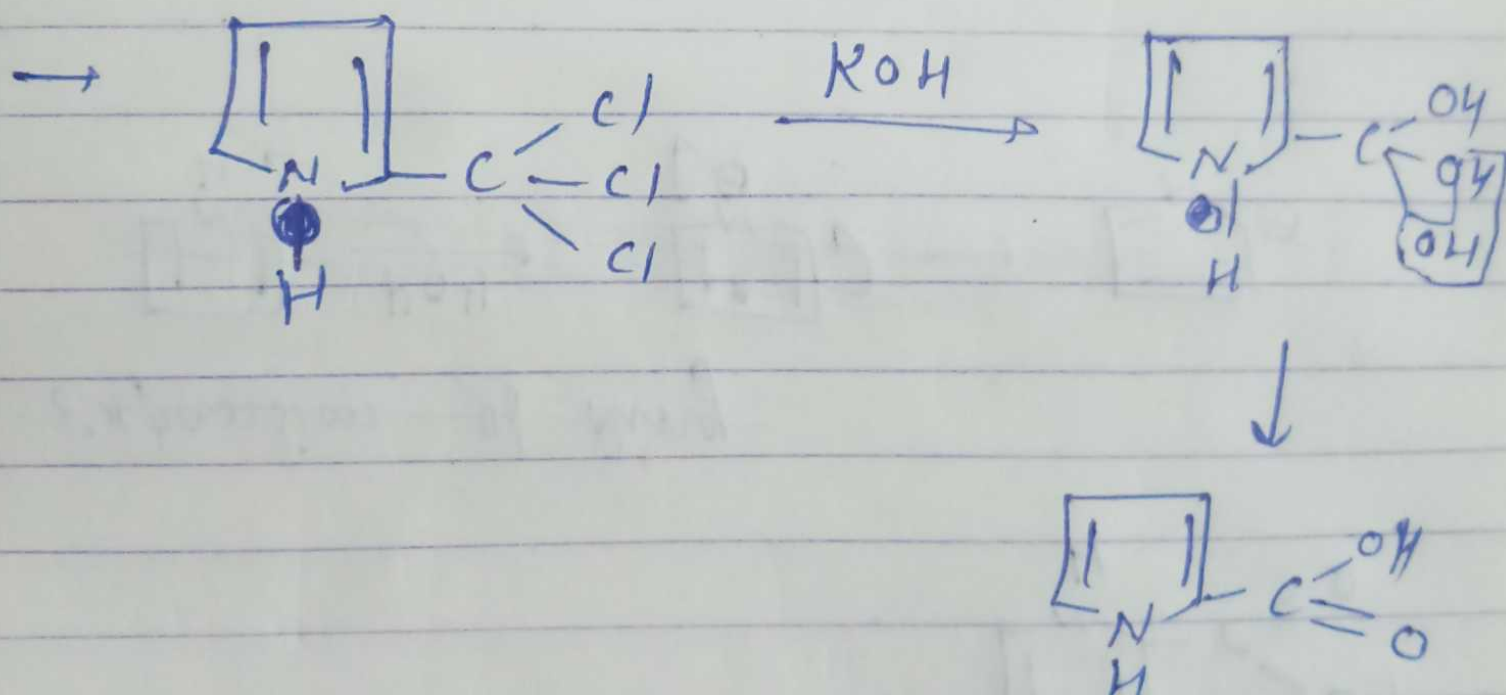
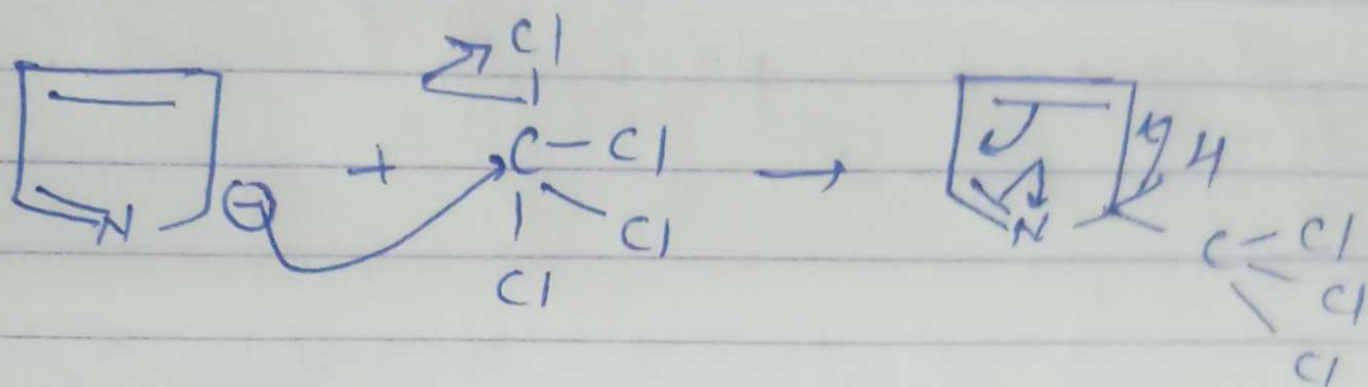
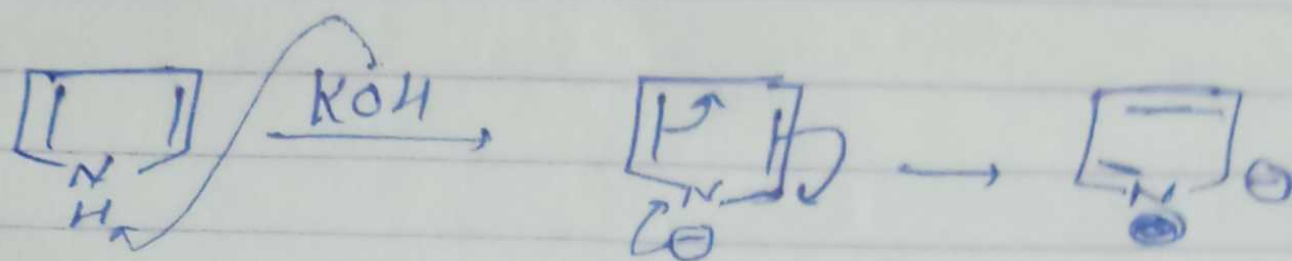
same mechanism is used for  
Houben-Hoesch synthesis.

# Reimer-Tiemann reaction





# Carbonylation



Kolbe - Schmidt reaction.

