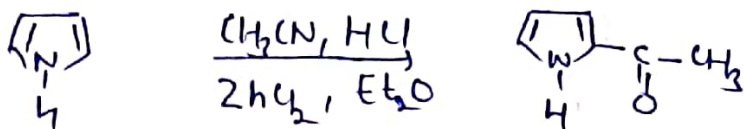
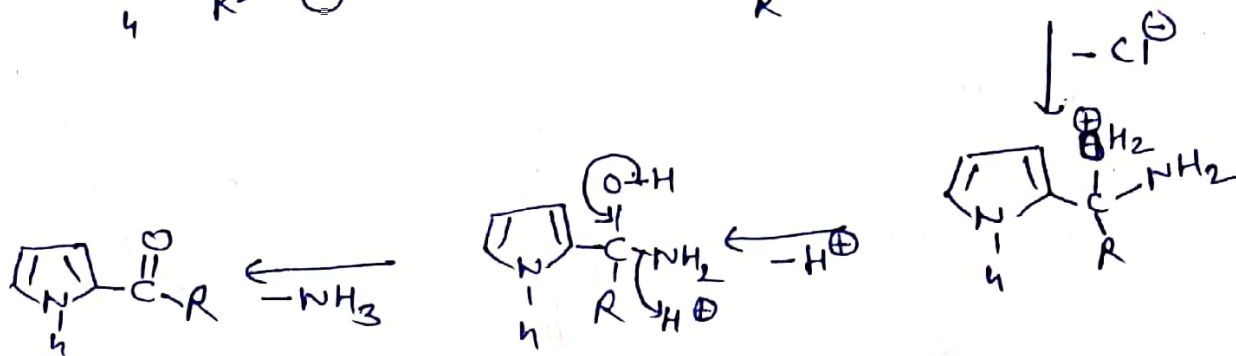
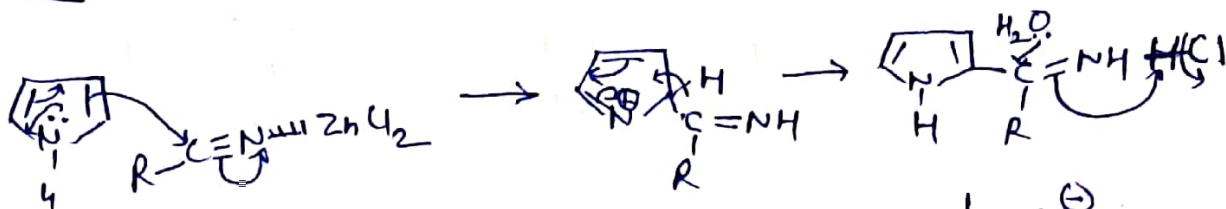


(I) Houben Hoesch Rxⁿ

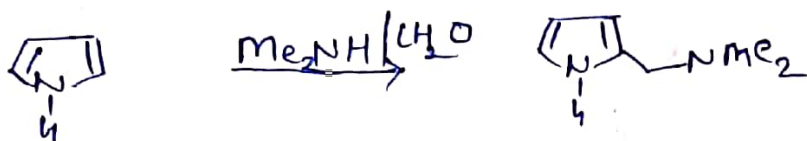
(4)



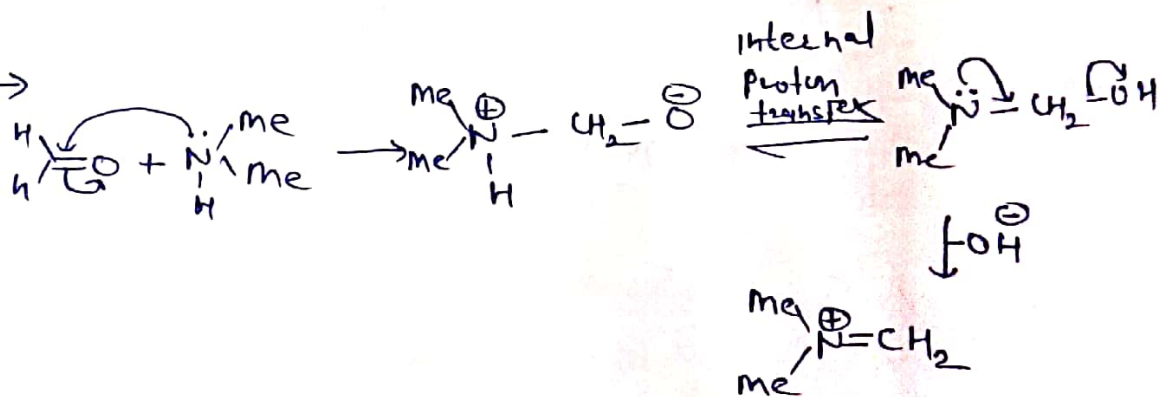
mechanism: →



(J) Mannich Rxⁿ



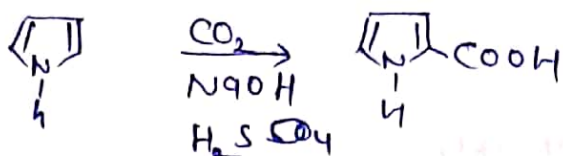
mechanism →



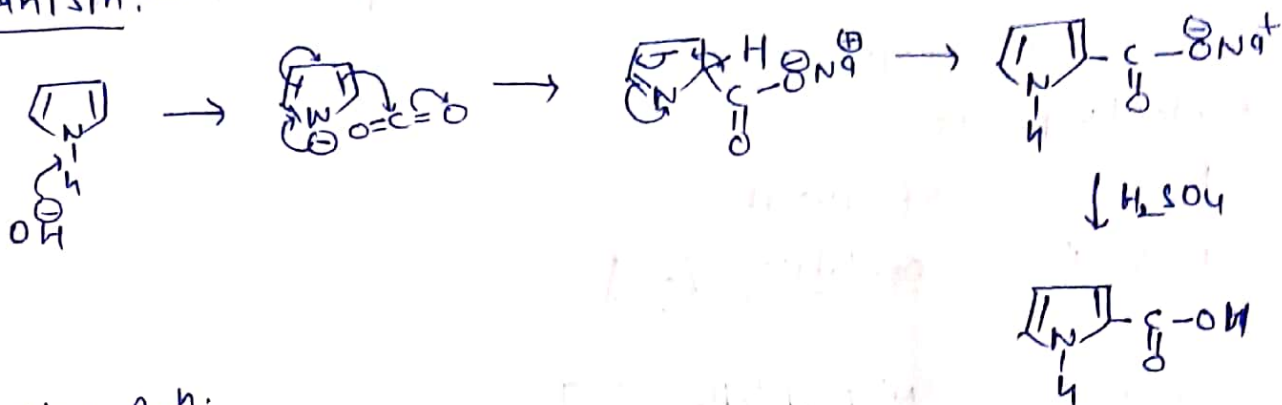
Expulsion proton in order to restore the aromatic character.

(K) Kolbe - Schmitt Reaction

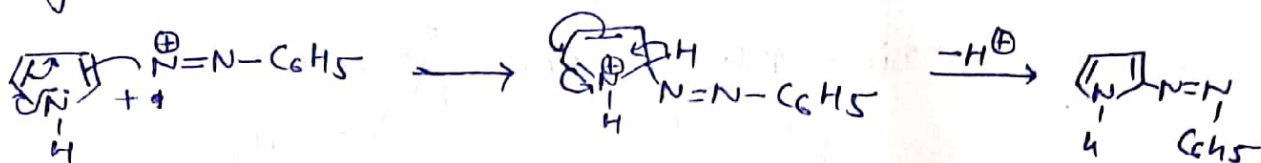
(5)



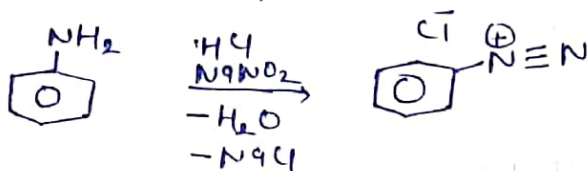
Mechanism:-



(L) Coupling Rxⁿ:-

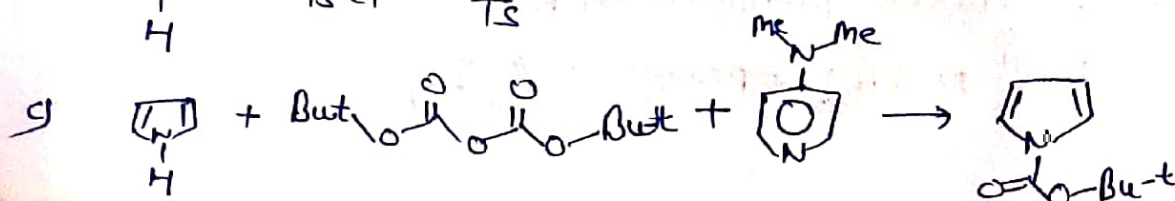
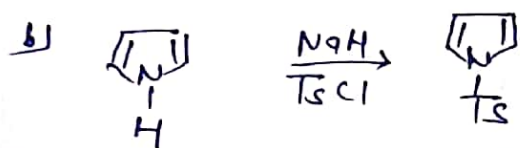
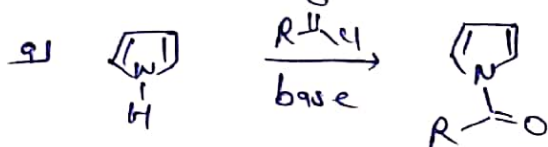


Preparation of phenyldiazonium electrophile



N-acylation of Pyrrole

- N-acylated derivatives can be made
- Commonly NaH used as a base
- Anion of Pyrrole reacts with electrophiles at the nitrogen



furan

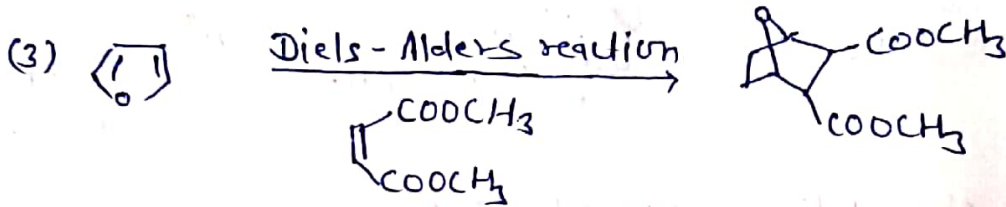
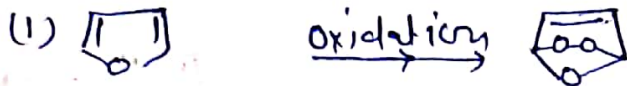
(6)



- furan is a colourless, flammable, highly volatile liquid with boiling point close to room temperature, it is toxic may be carcinogenic

* Electrophilic

Reactions of furan

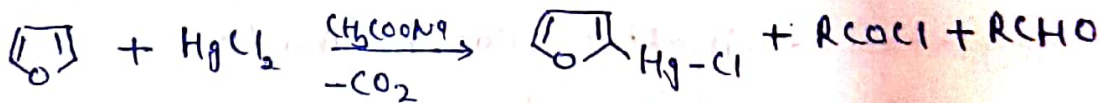


(4) Electrophilic subs Reactions

(A) Rxn with RLi



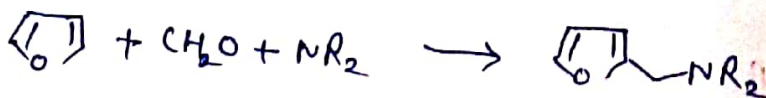
(B) mercuration Rxn



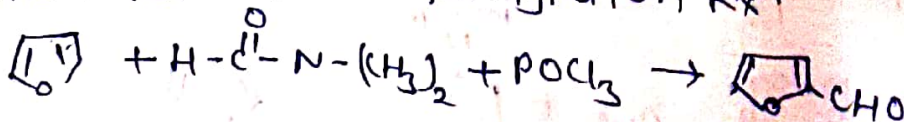
(C) Gomberg Reaction



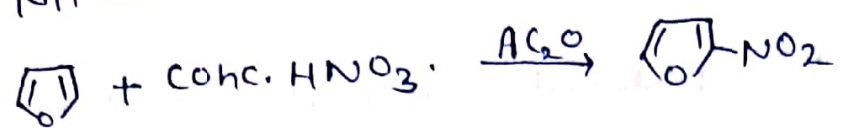
(d) Mannich Rxn



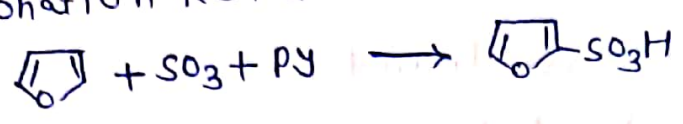
(e) Vilsmeier-Haack formylation Rxn



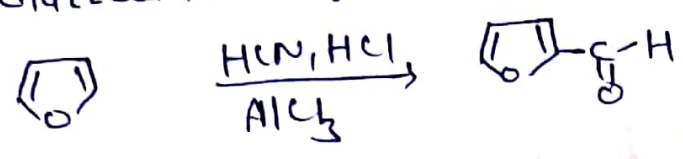
(F) Nitration Rxⁿ



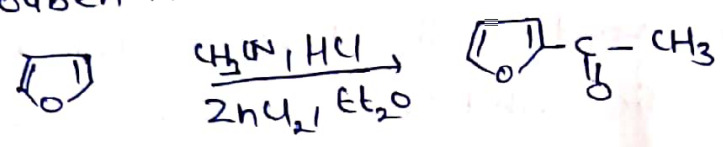
(G) Sulfonation Reaction



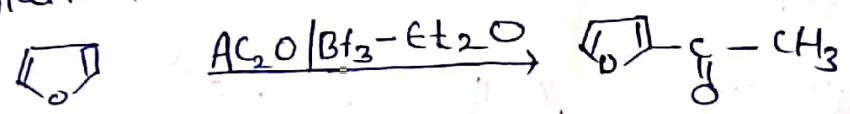
(H) Gattermann Synthesis



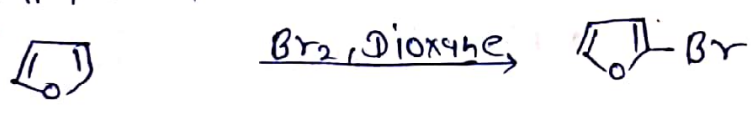
(I) Houben Hoesch Rxⁿ



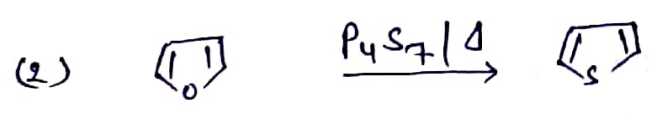
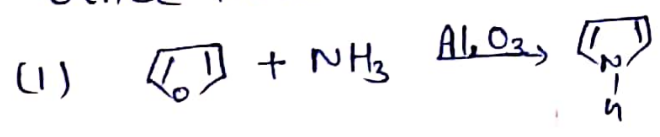
(J) Acylation Rxⁿ



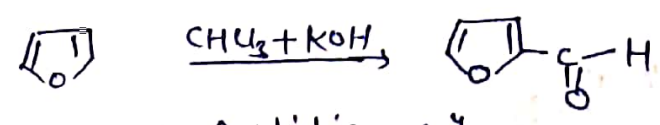
(K) Bromination Rxⁿ



Other Reactions



(L) Reimer Tieman Reaction



(M) Michael Addition Rxⁿ

