

(Lecture -7)

Topic - "Diazotization Reaction"

And

Schotten- "Baumann Reaction"

Degree-II (SUB.)

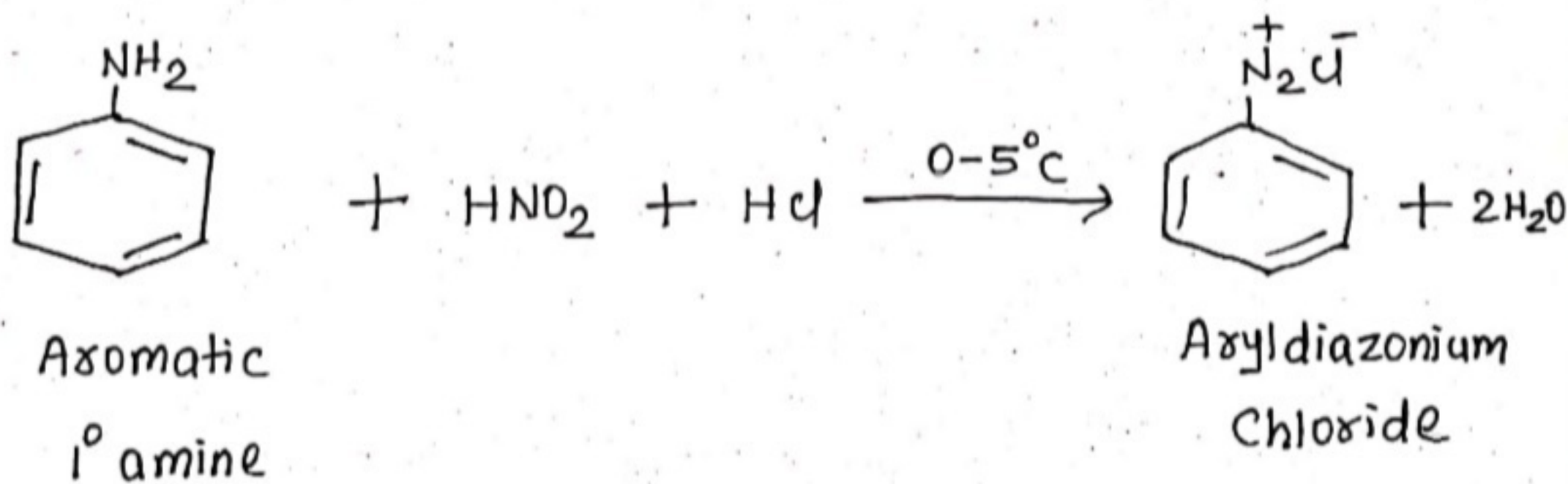
Chapter-'5'

Group -'C'

(Organic Portion)

"Diazotization Reaction"

- * Arylenediazonium salts are prepared by the action of an aromatic primary amines with nitrous acid at about $0-5^{\circ}\text{C}$.
- * The nitrous acid (HNO_2) is obtained insitu by taking sodium nitrite and a mineral acid (HCl or H_2SO_4) in the reaction mixture.

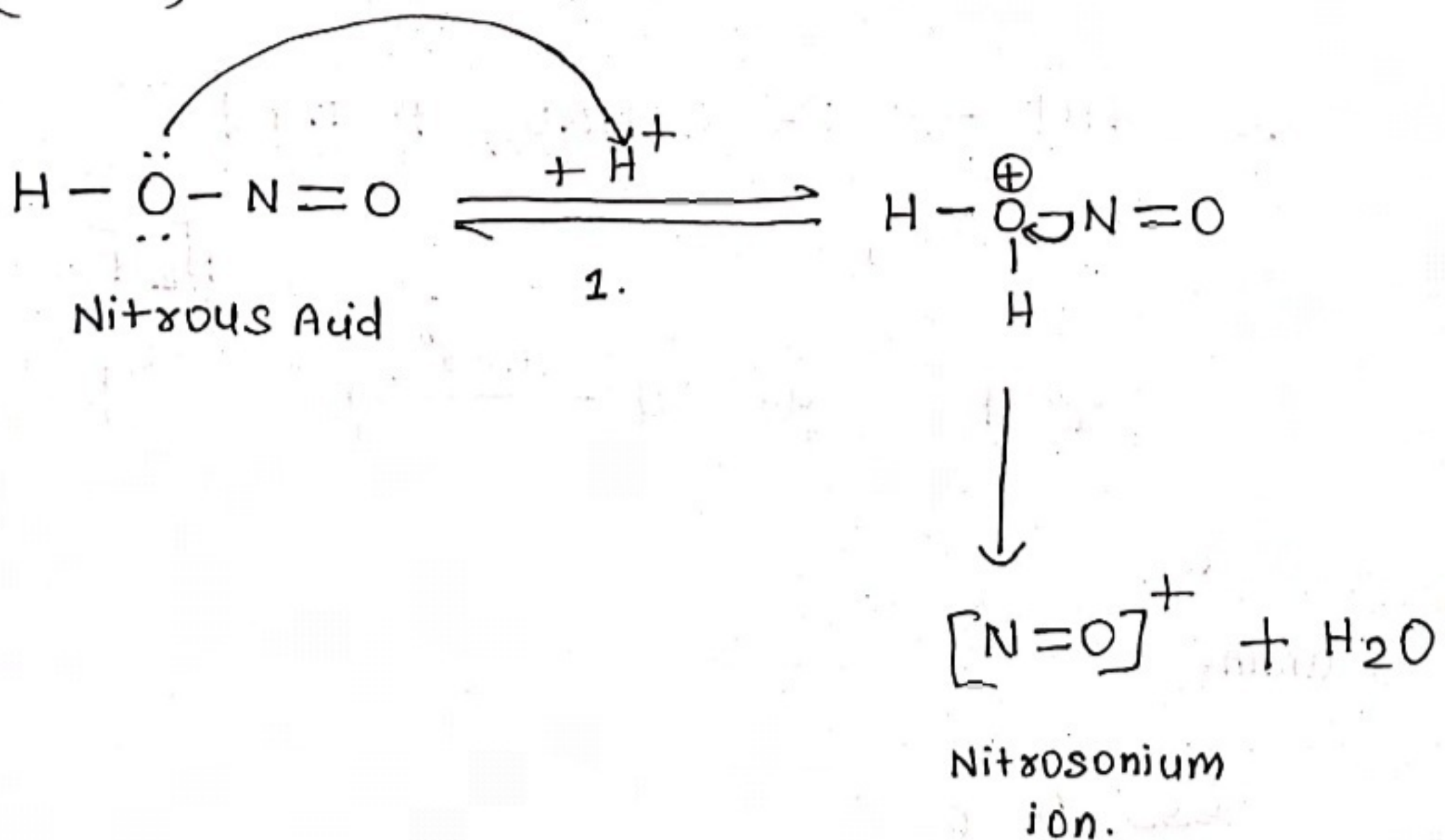


- * The process of converting an amine into the diazonium salt is called diazotization.

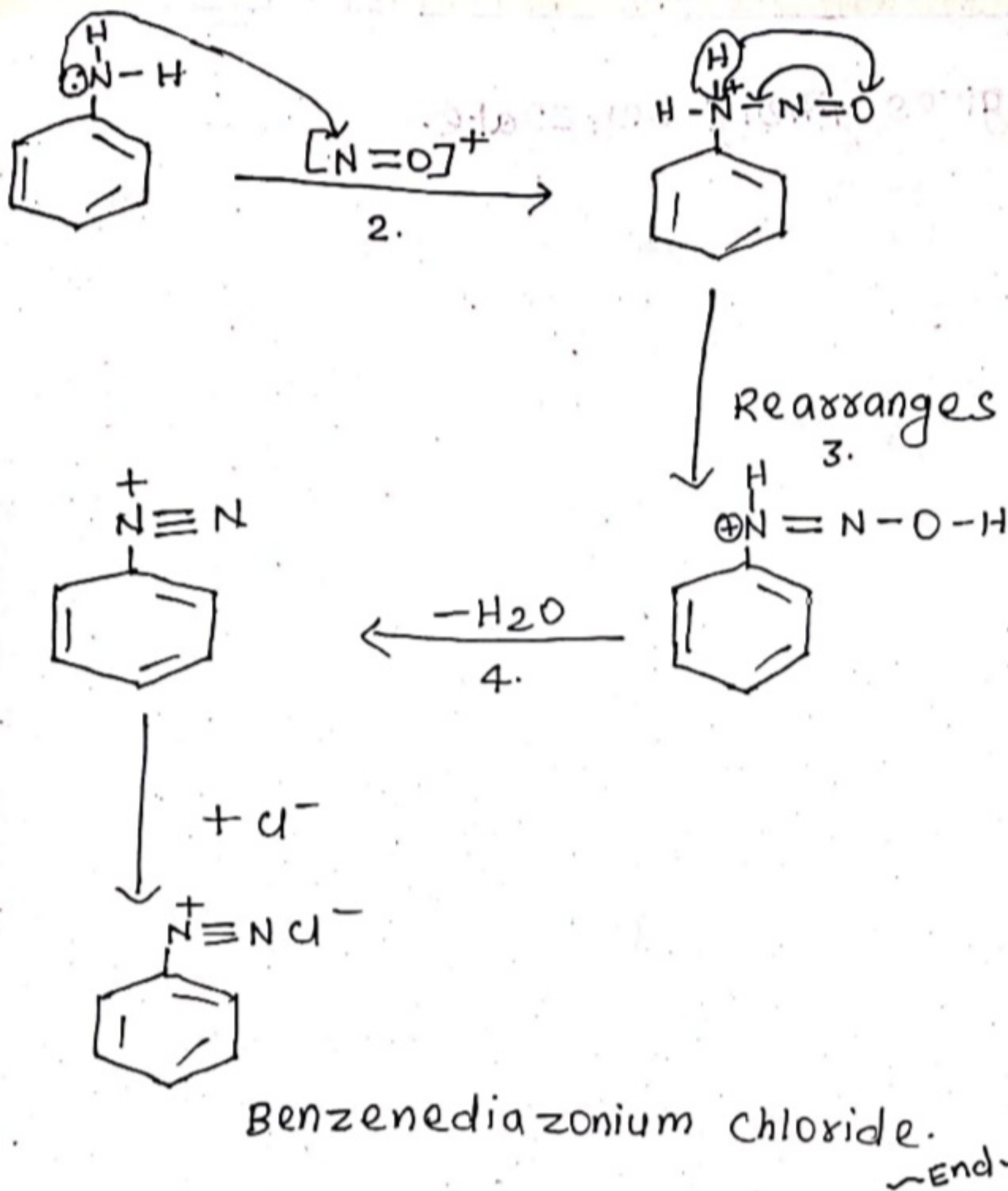
Continued...

Following steps are involved :-

1. Nitrous acid $[NaNO_2/HCl]$ furnishes nitrosonium ions $[N=O]^+$.
2. Nitrosonium ions combine with aniline to form nitrosoaniline.
3. Nitrosoaniline undergoes rearrangement followed by dehydration to form diazonium ion which takes up Cl^- to yield the diazonium salt.
(chlorine)



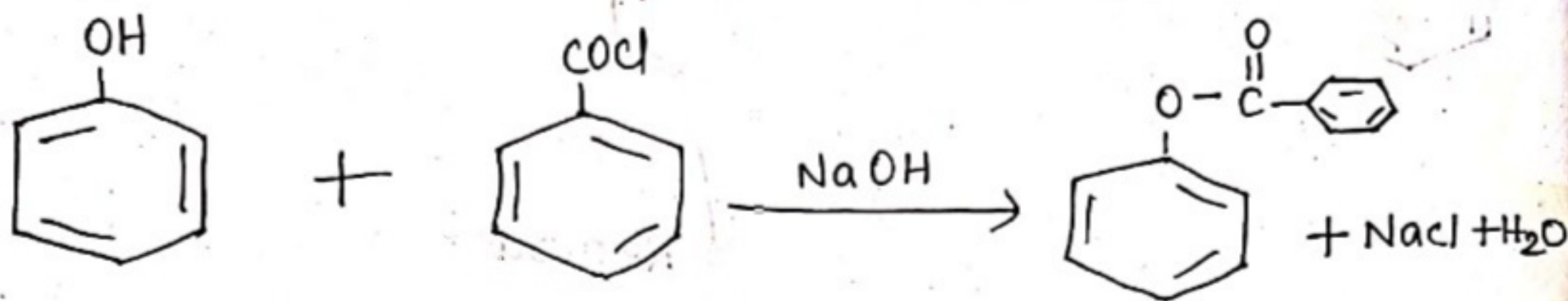
Continued.....



"Schotten-Baumann Reaction"

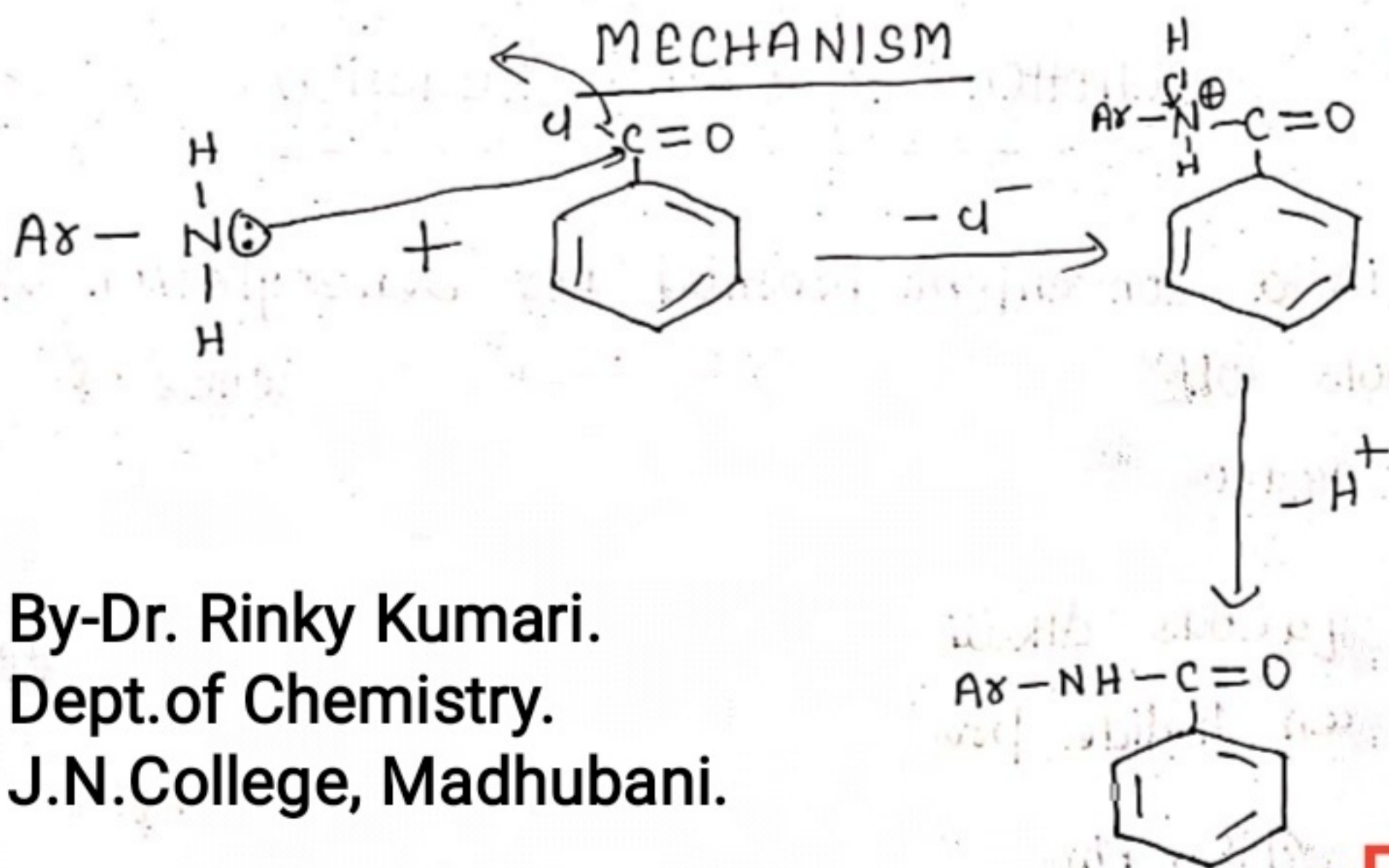
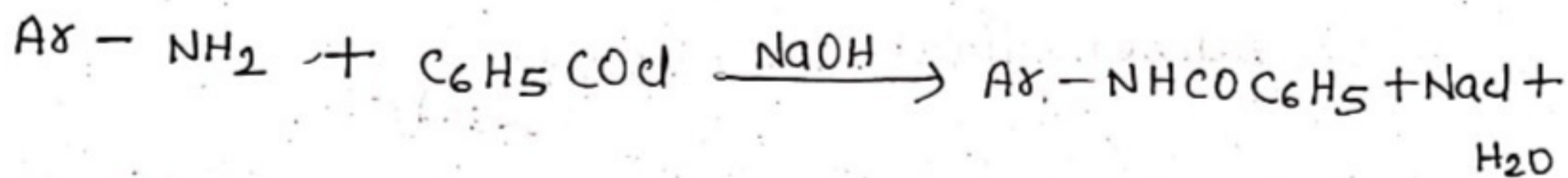
- * It is a convenient method for benzoylation of phenols with benzoyl chloride in the presence of cold aqueous sodium hydroxide.
- * The aqueous alkali acts as a scavenger for the hydrogen halide produced.
- * For example, Phenol on reaction with benzoyl chloride

in 10% NaOH gives phenyl benzoate.



Aromatic amines (both primary and secondary) can also be benzoylated under the conditions of Schotten - Baumann Reaction.

Aniline form benzamide on treatment with benzoyl chloride in 10% NaOH.



By-Dr. Rinky Kumari.
Dept. of Chemistry.
J.N. College, Madhubani.

~End~