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• Aromatic Amines:

Reactions of Amines

1. Basic character of Amines

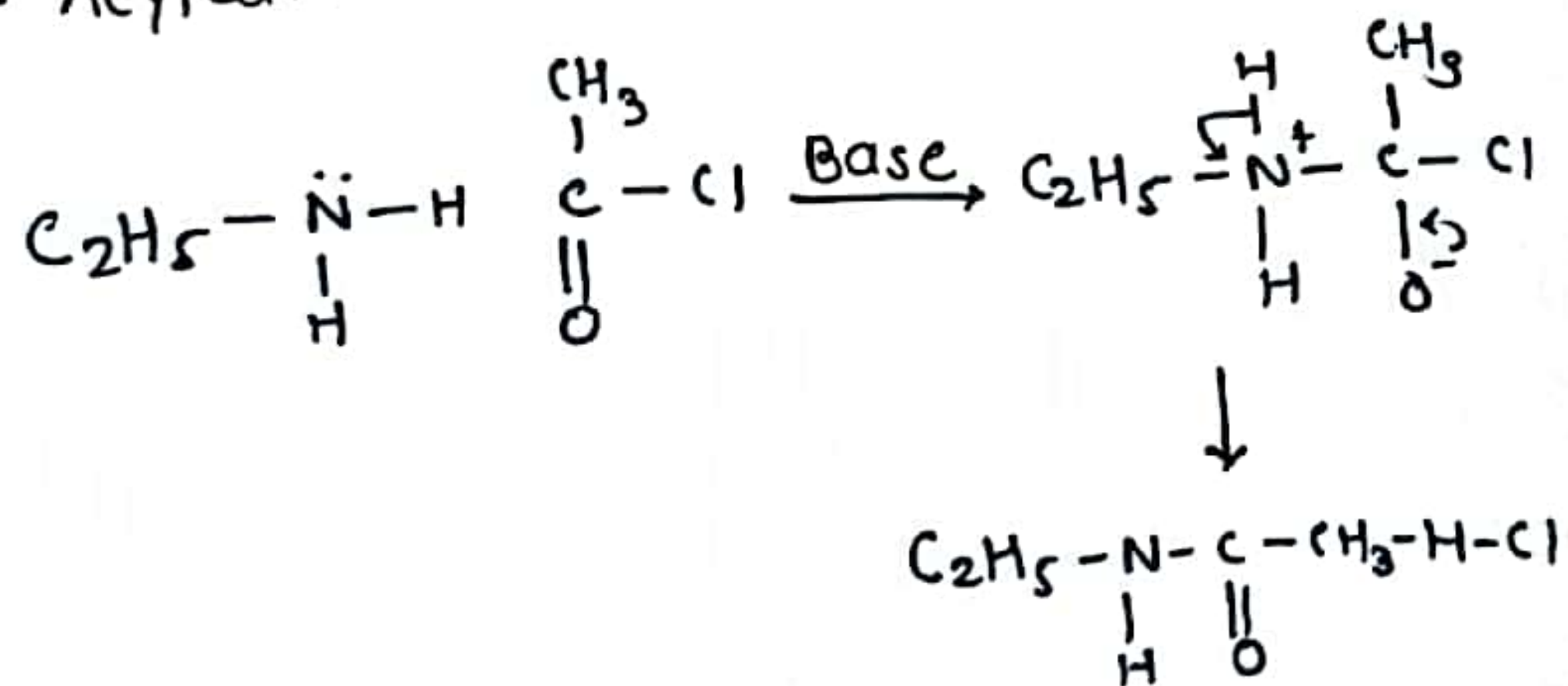


2. Alkylation

• Amines undergo alkylation on reaction with alkyl halides

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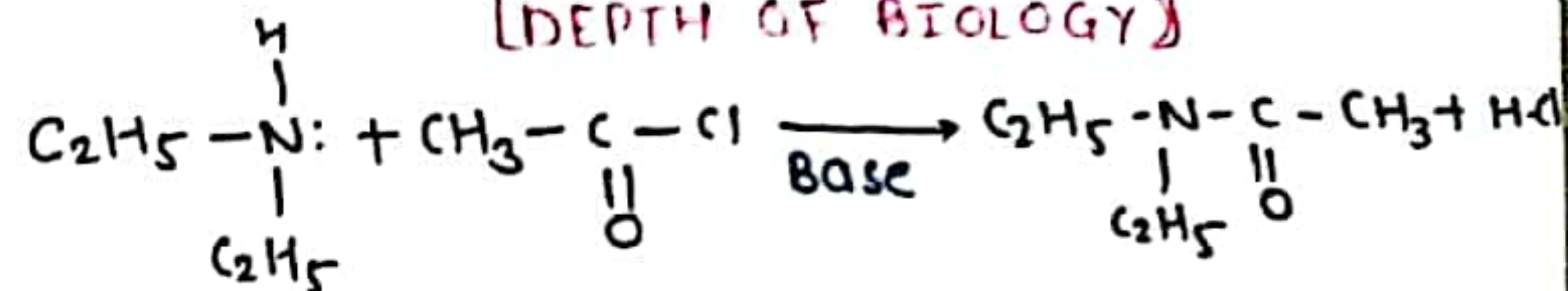
3. Acylation



N-Ethylethanamide.

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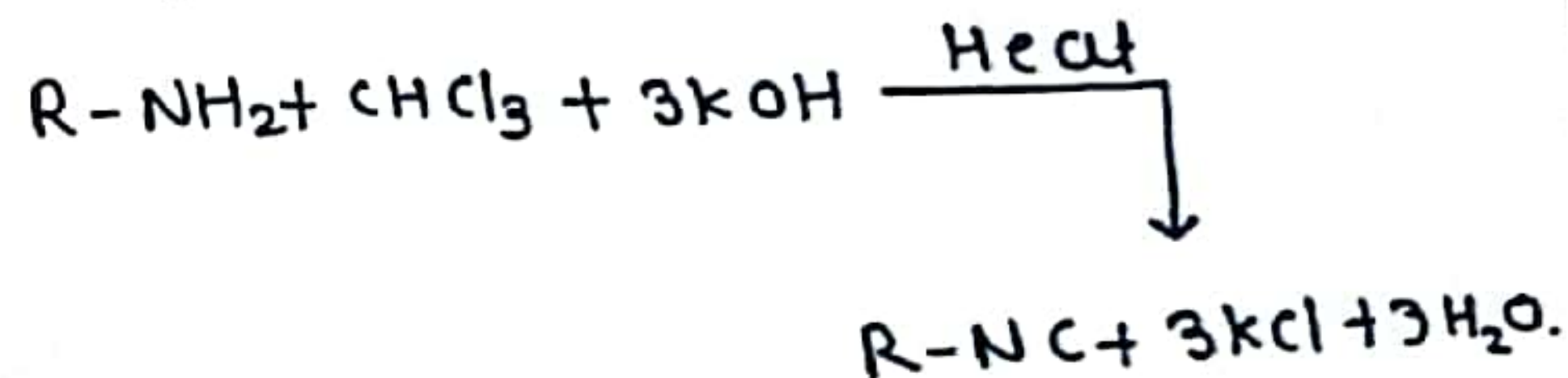
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N-ethyl ethanamine

N,N-diethyl
ethanamide.

4. Carbylamine reaction

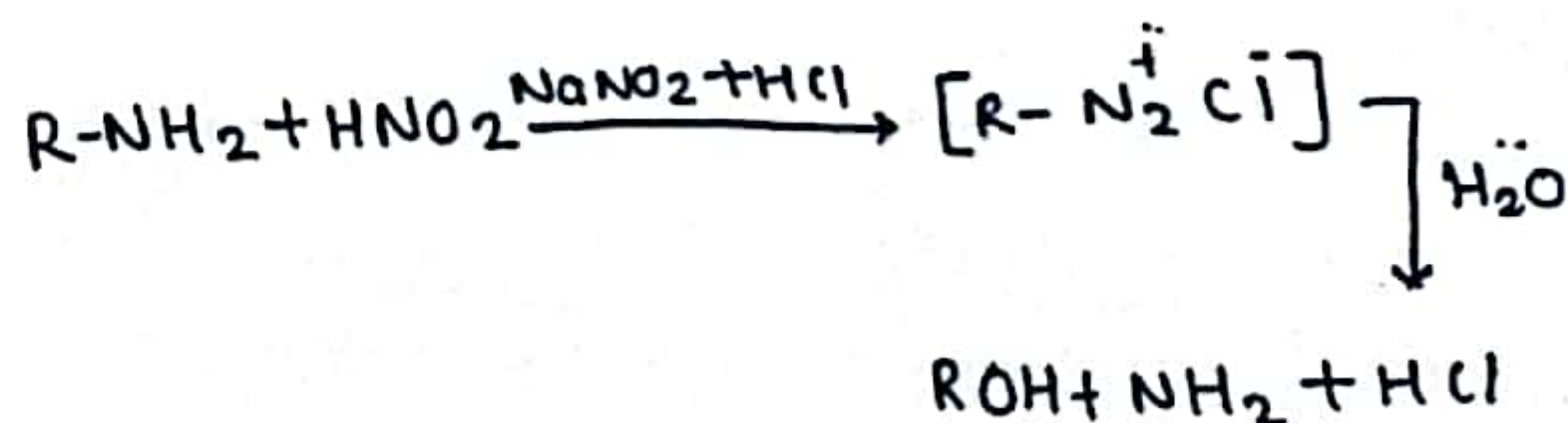


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5. Reaction with Nitrous acid.

• Three classes of amines react differently with Nitrous acid.

(a) primary aliphatic amines:

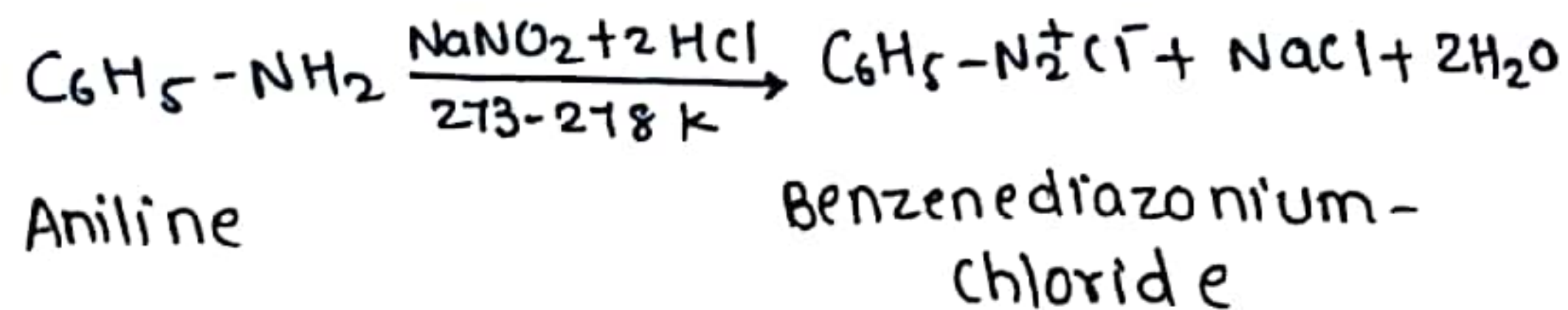


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(b) Aromatic Amines:

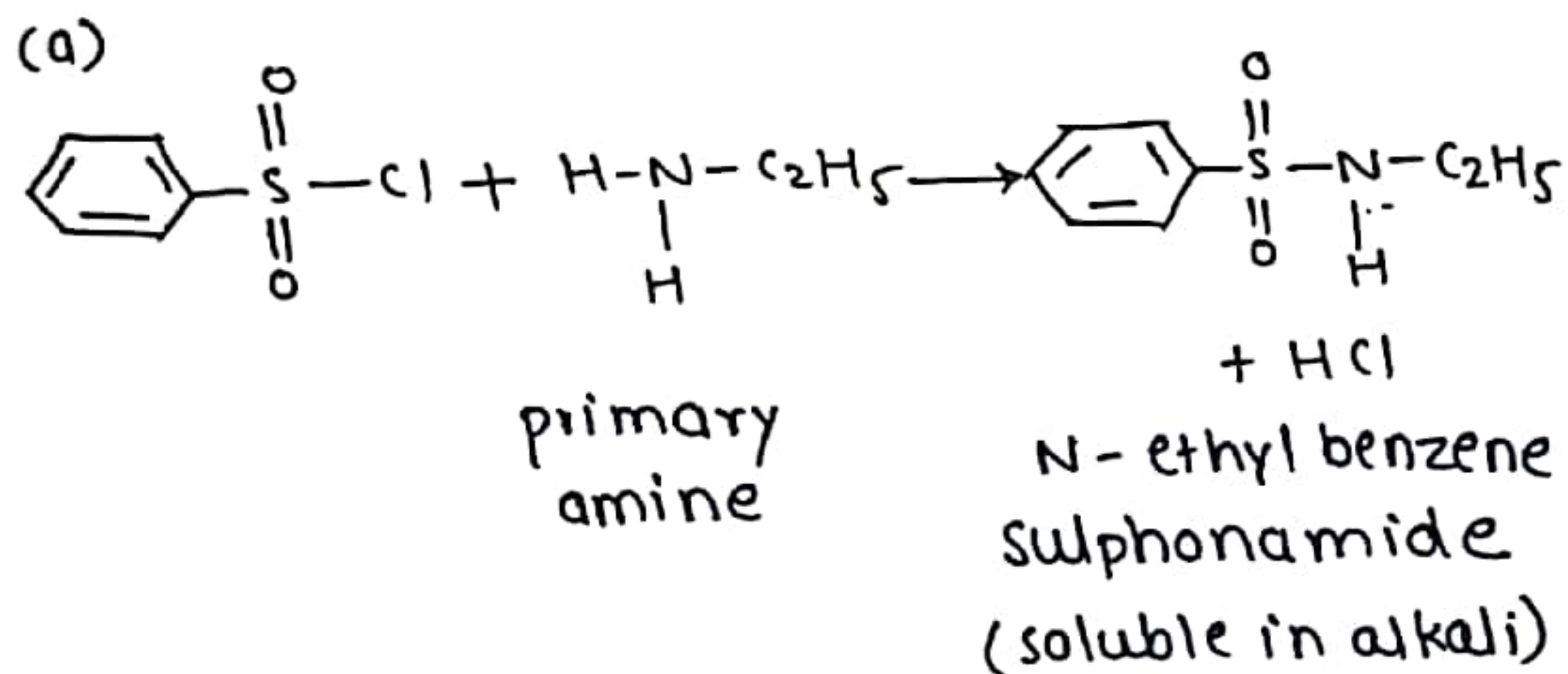


- secondary & tertiary amines react differently

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6. Reaction with arylsulphonyl chloride:

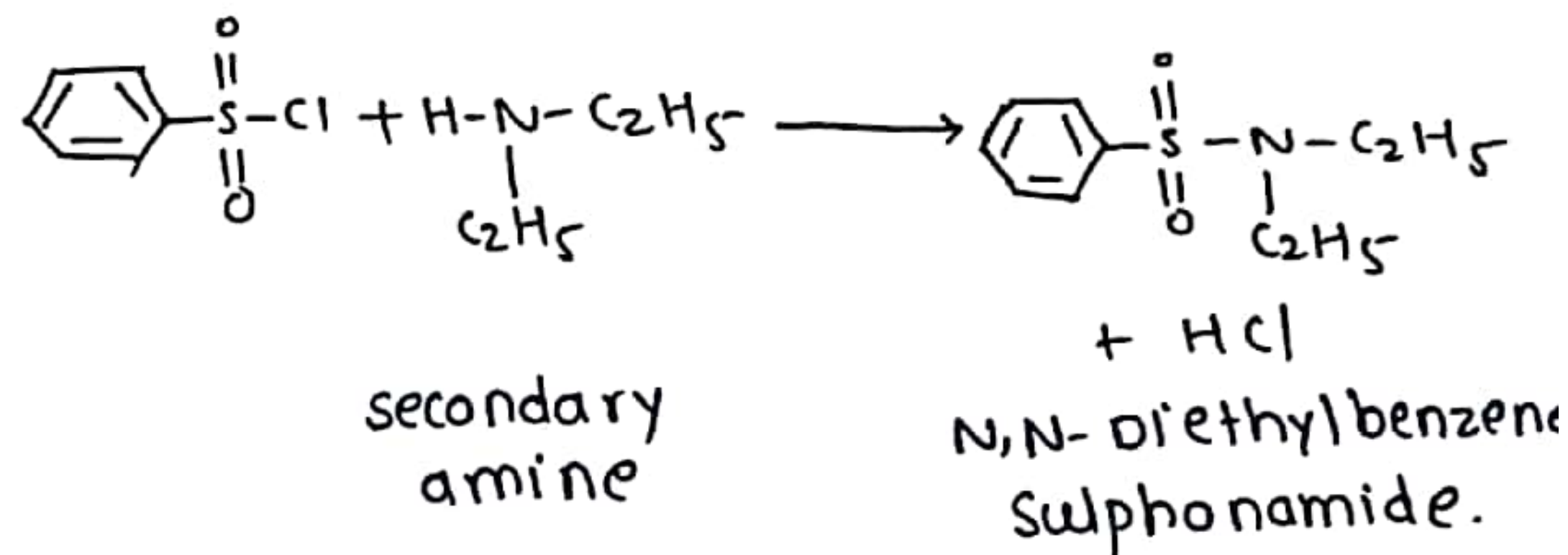
- Hinsberg's reagent + 1° (or) 2° amines → sulphonamides (benzene sulphonyl chloride)



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(b)



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(c) 3° amines

- do not react with Hinsberg's reagent
- This method is used to differentiate between & separating 1°, 2°, & 3° amines from a mixture of Amines

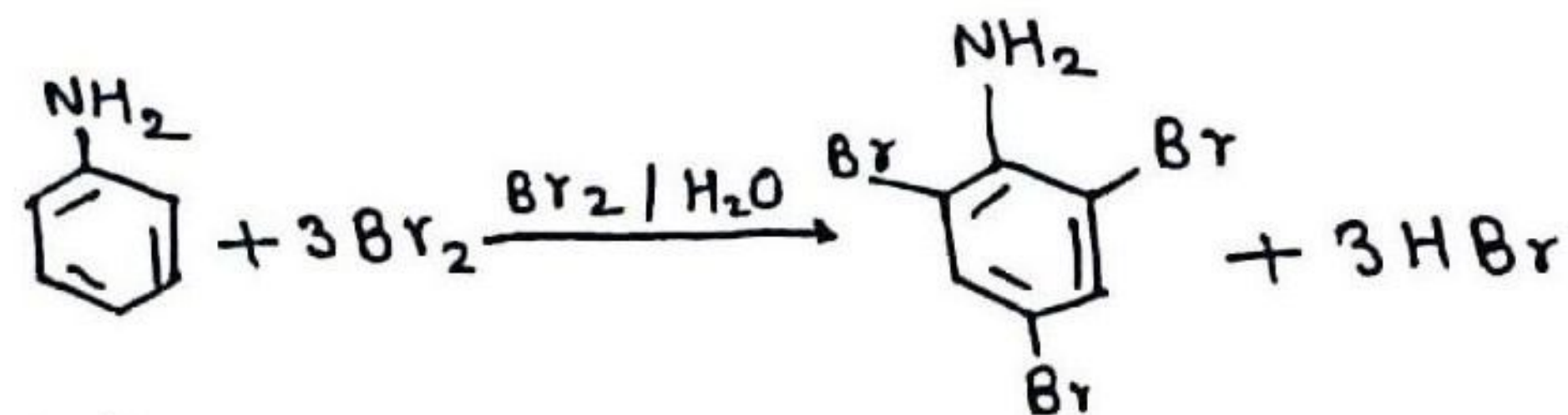
Nowadays,

Benzenesulphonyl chloride is replaced by p-toluenesulphonyl.

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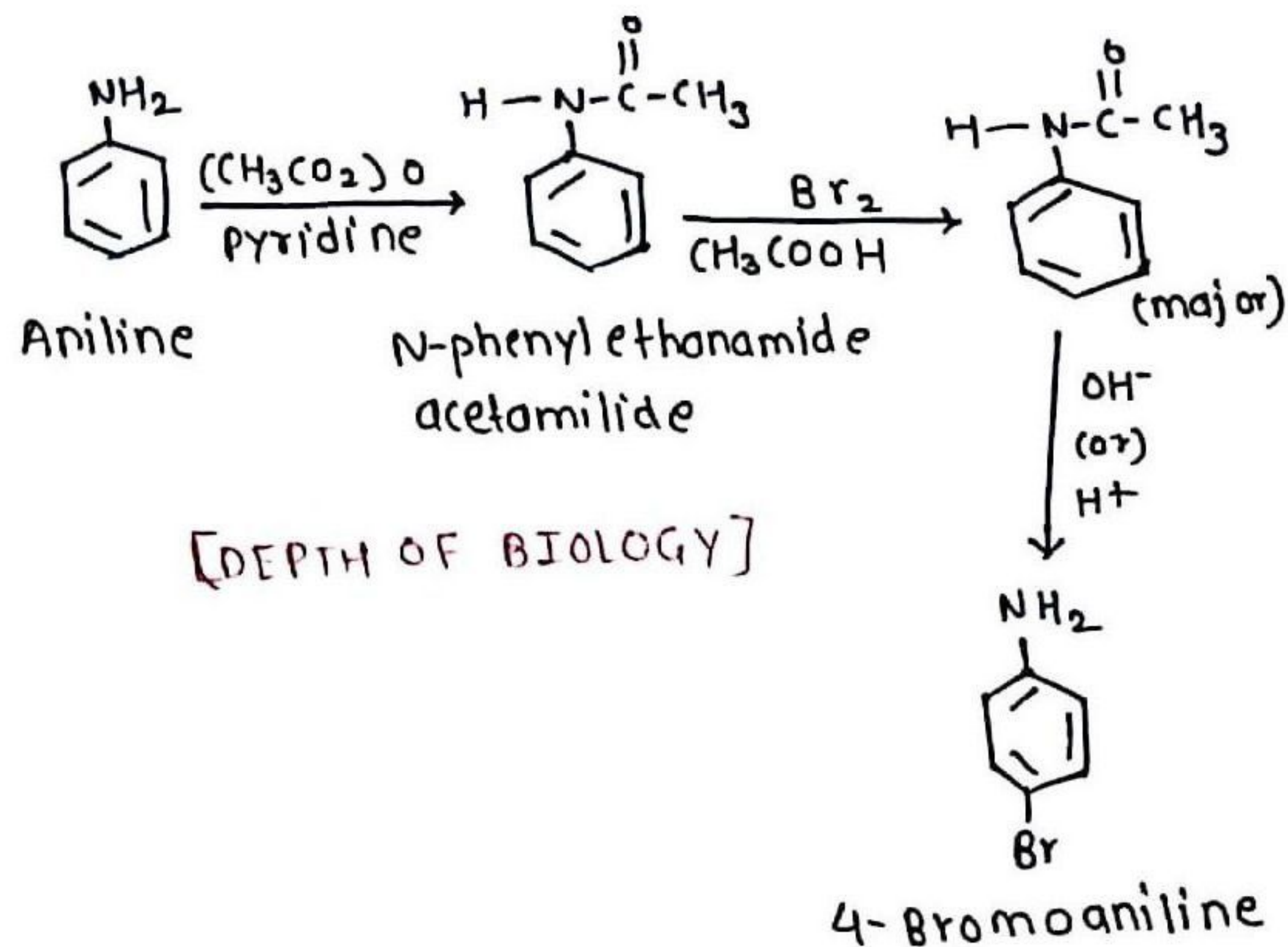
7. Electrophillic substitution.

(a) Bromination:



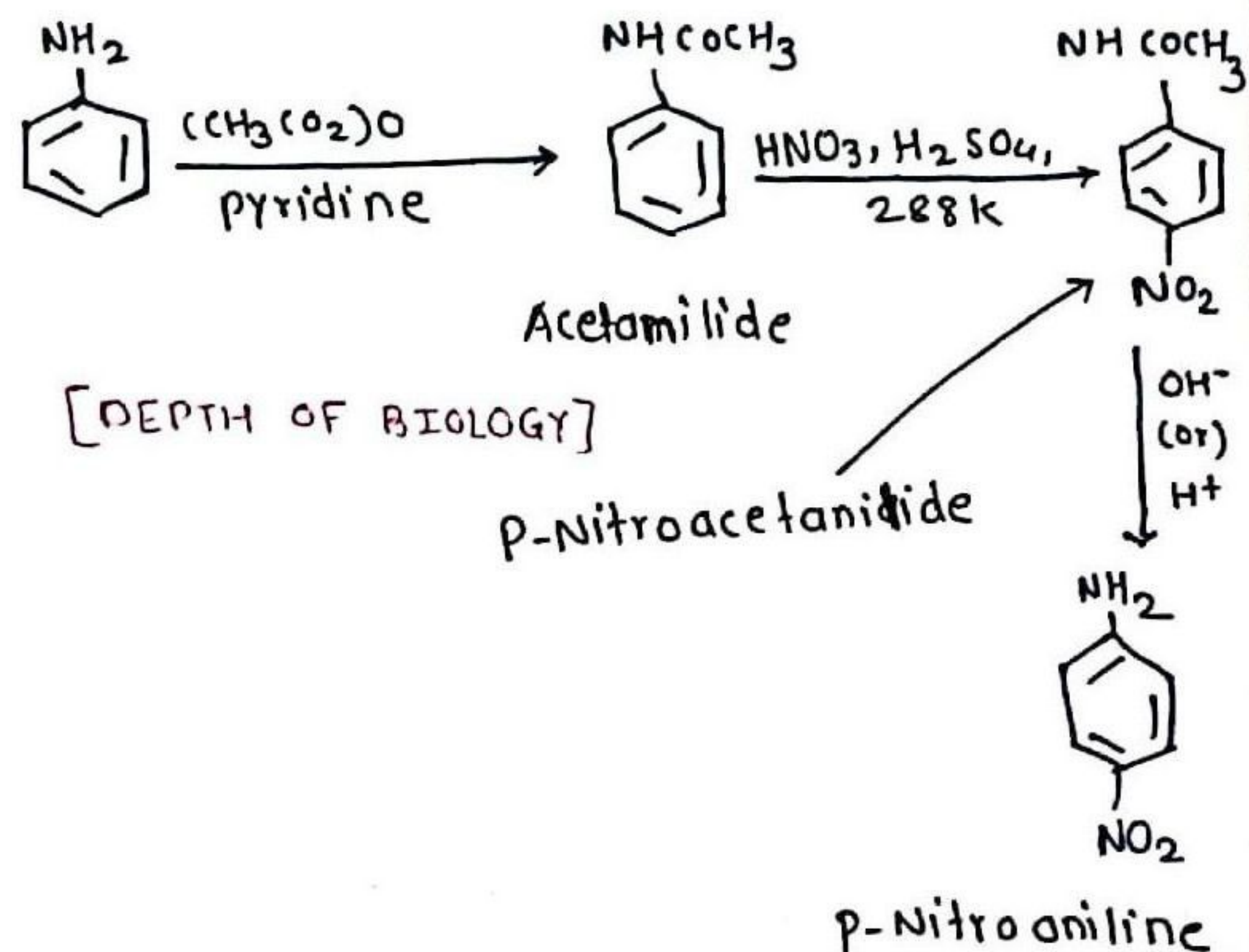
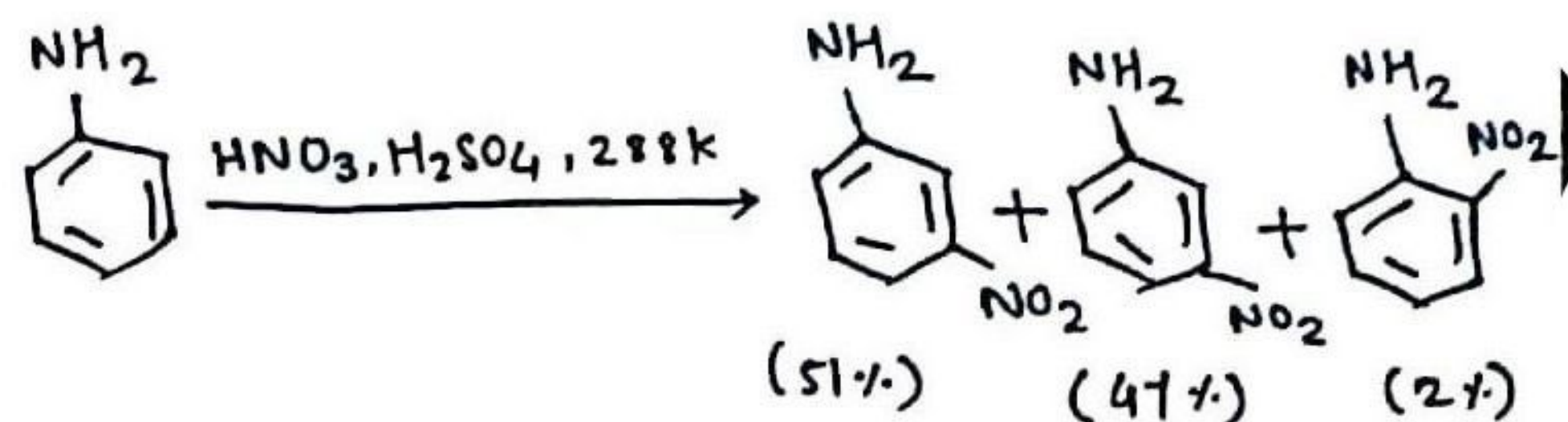
Aniline

2,4,6-Tribromoaniline



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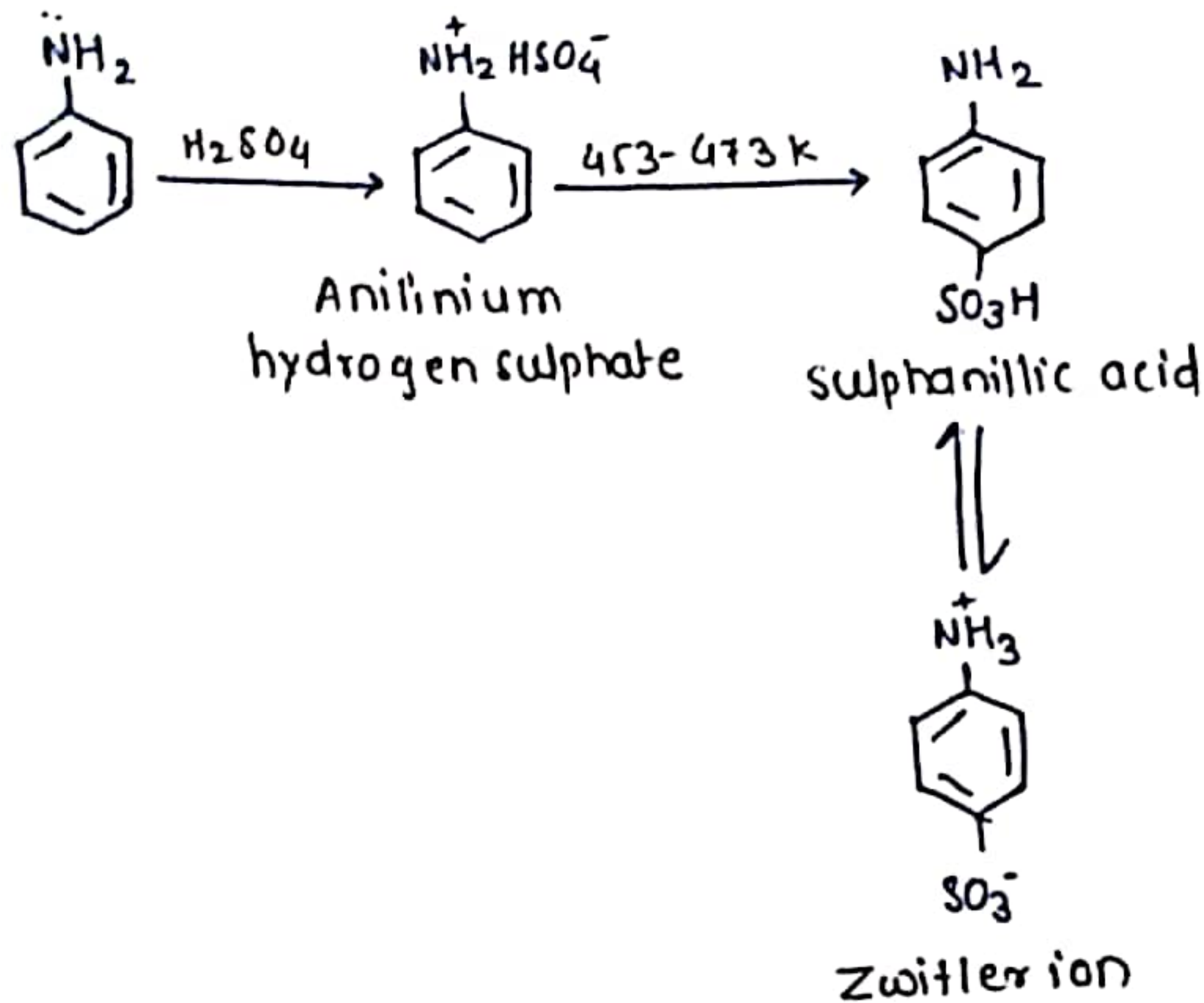
(b) Nitration:



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(c) Sulphonation:

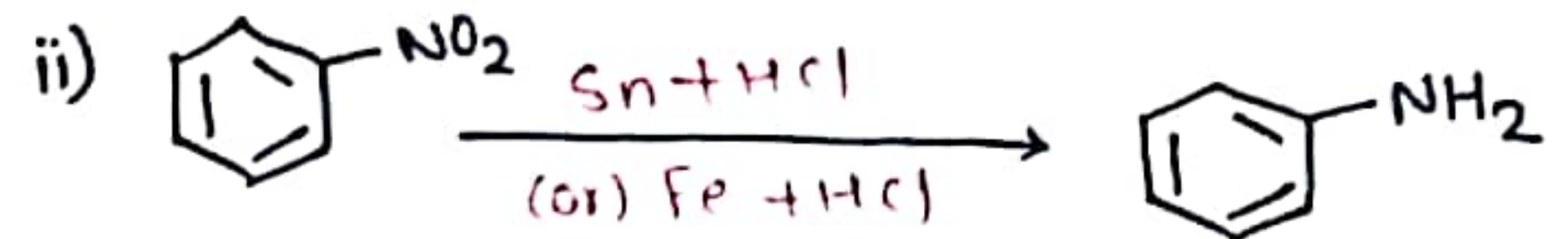
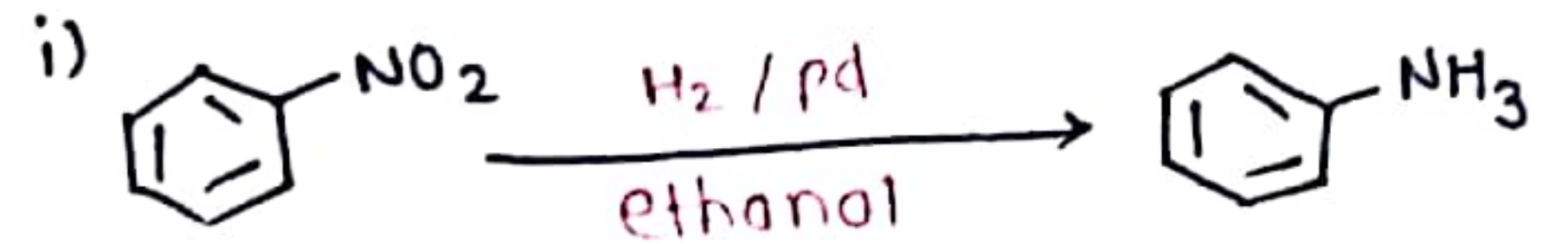


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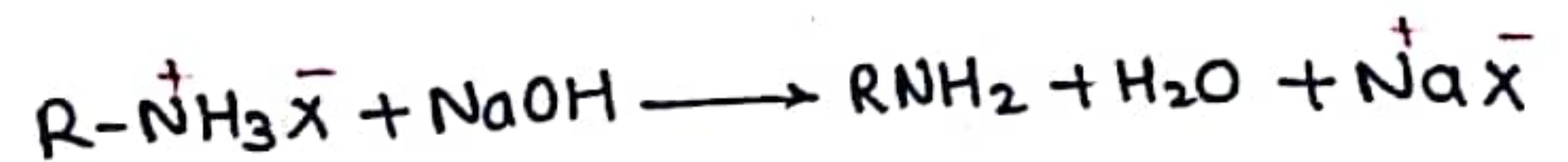
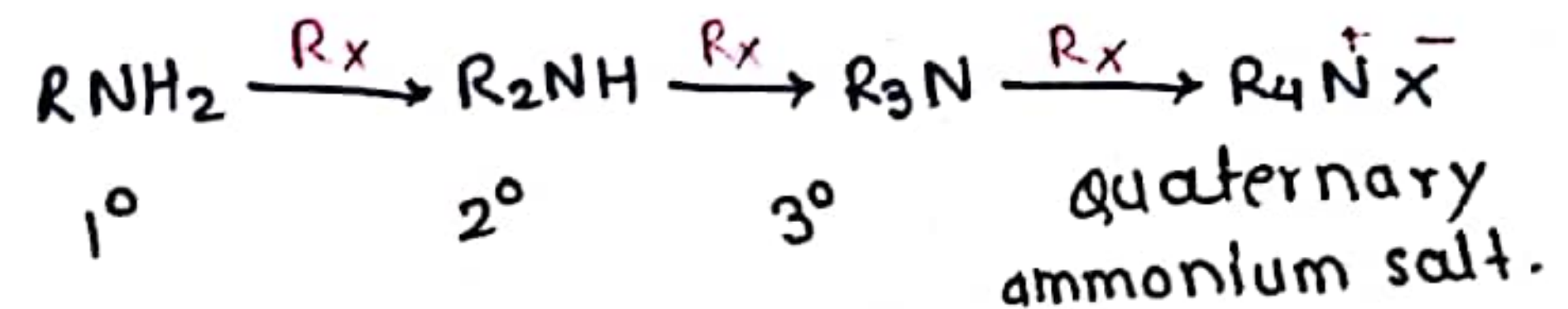
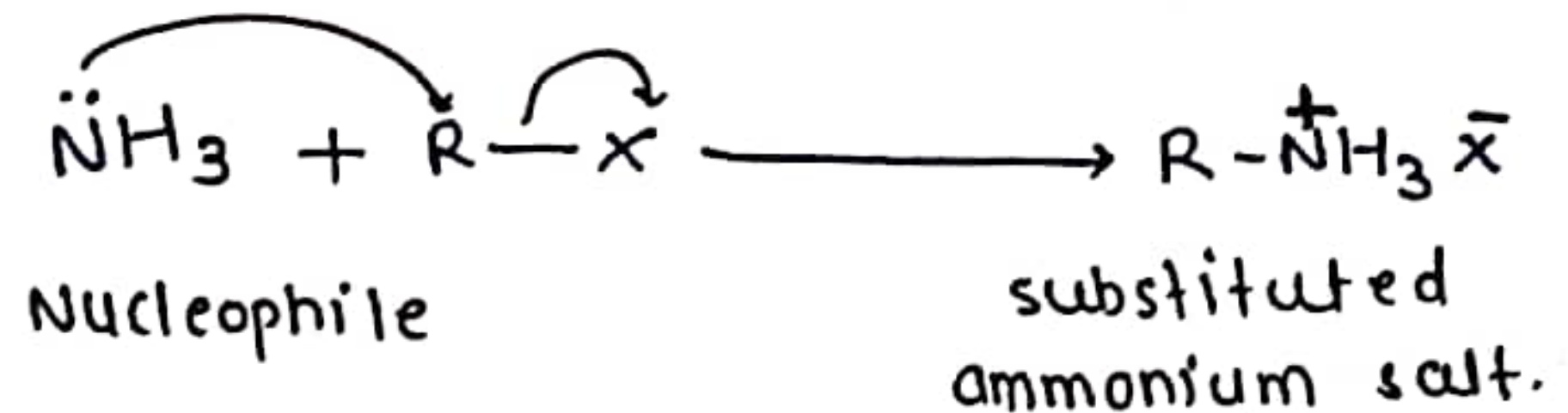
Preparation of Amines:

① Reduction of Nitro compounds:



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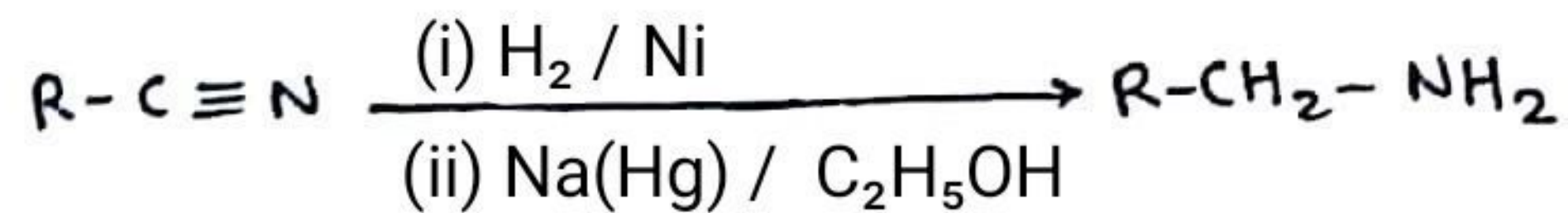
② Amminolysis of alkyl halides:



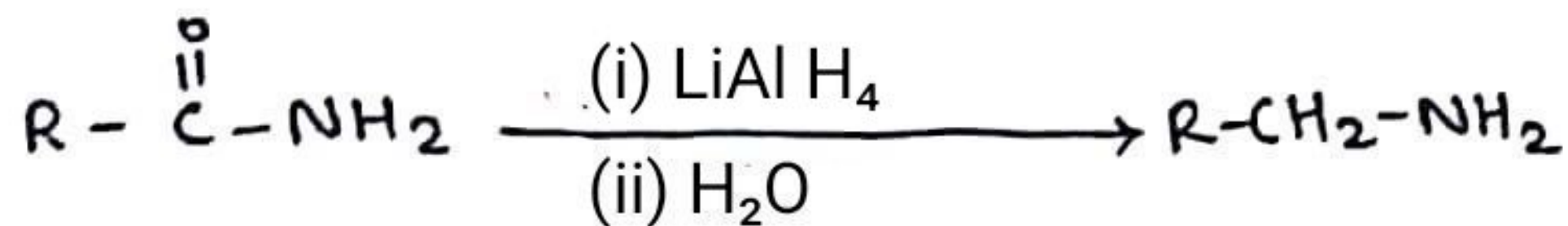
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③ Reduction of Nitriles:

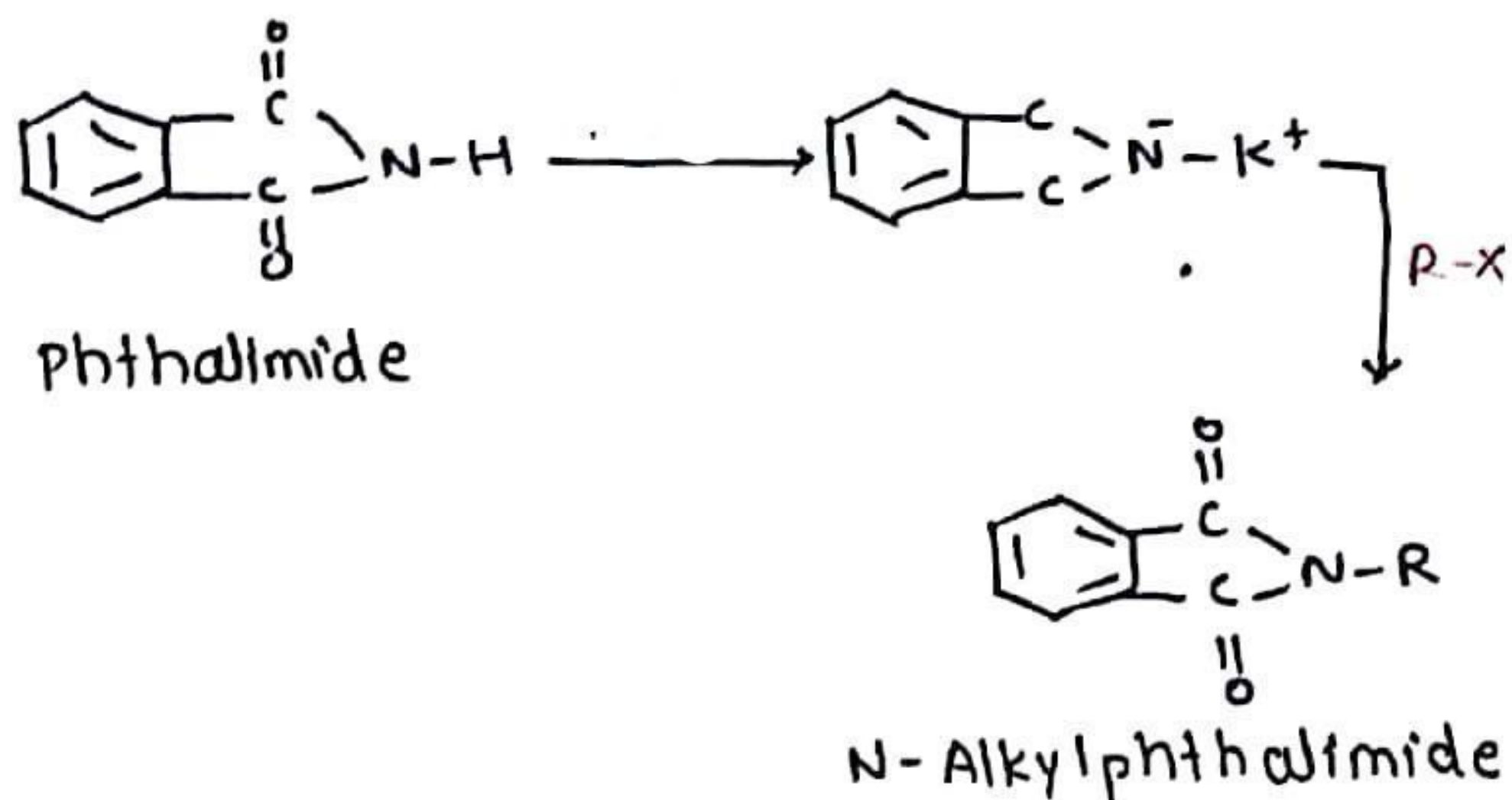


④ Reduction of Amides:



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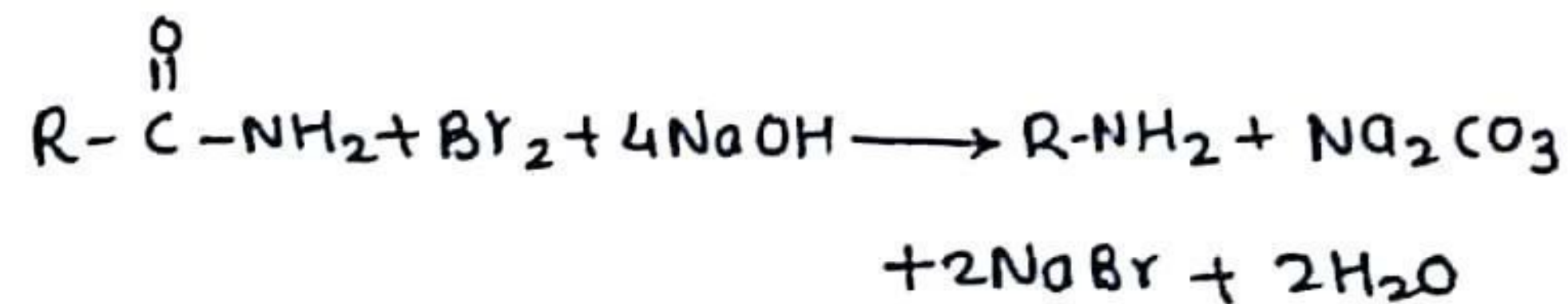
⑤ Gabriel phthalimide synthesis



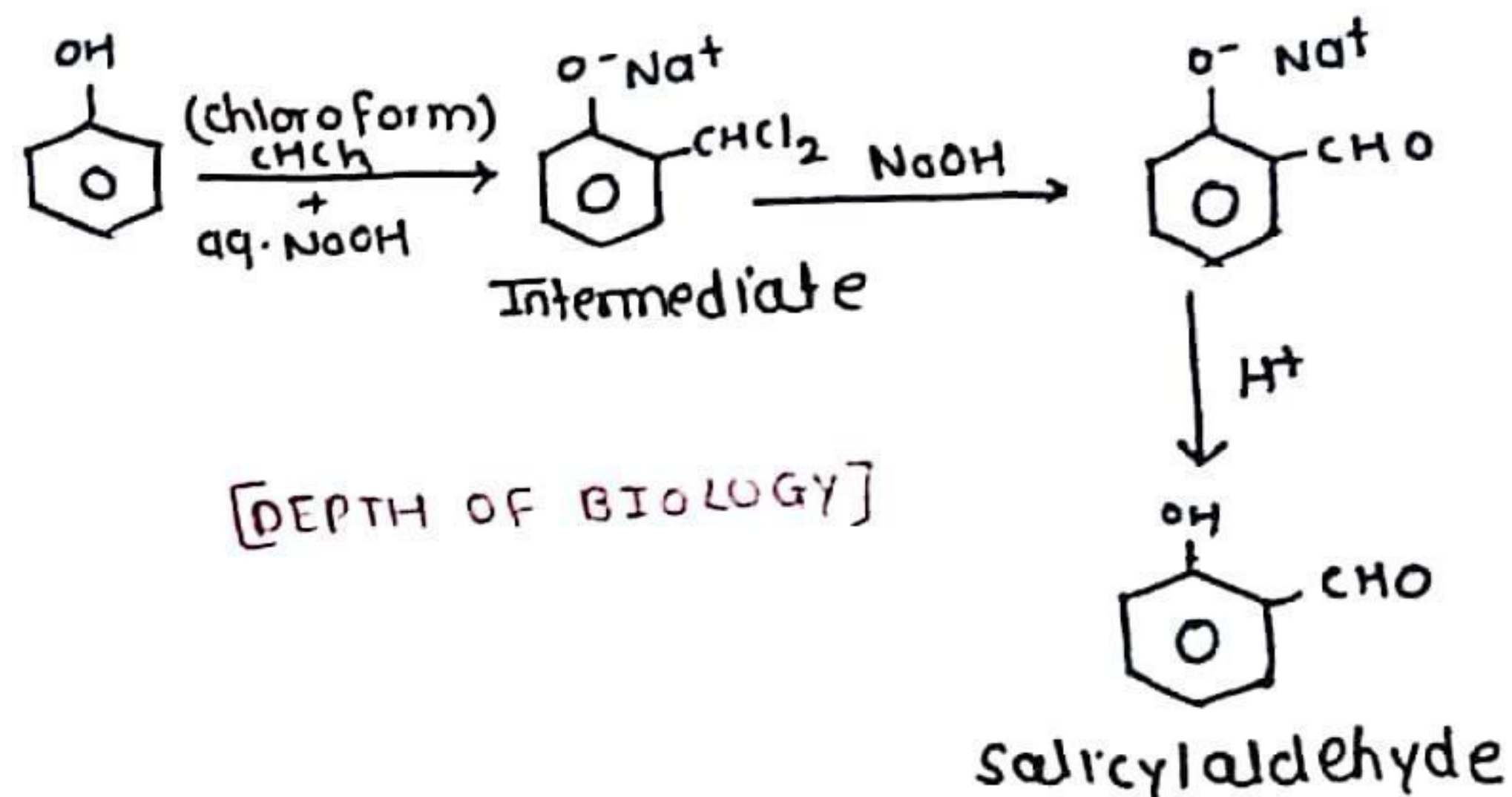
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⑥ Hoffmann bromamide degradation reaction.



3. Reimer Tiemann Reaction:



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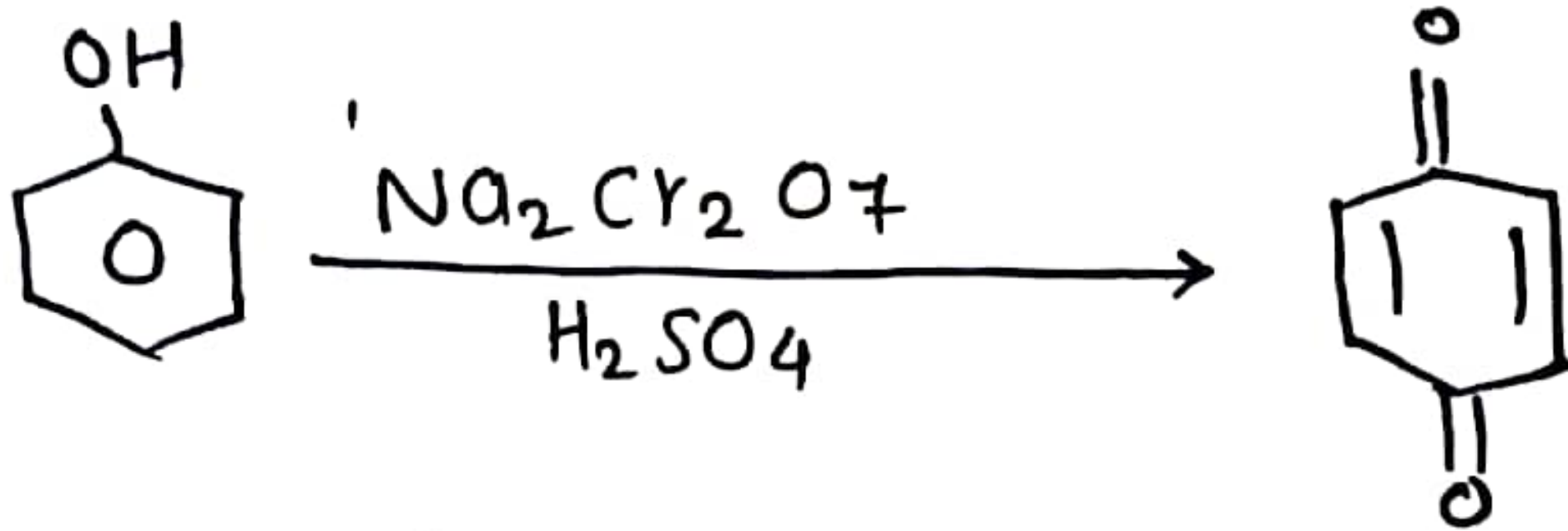
4. Reaction of phenol with Zn dust:



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5. Formation of Benzo quinone:



Benzoquinone.