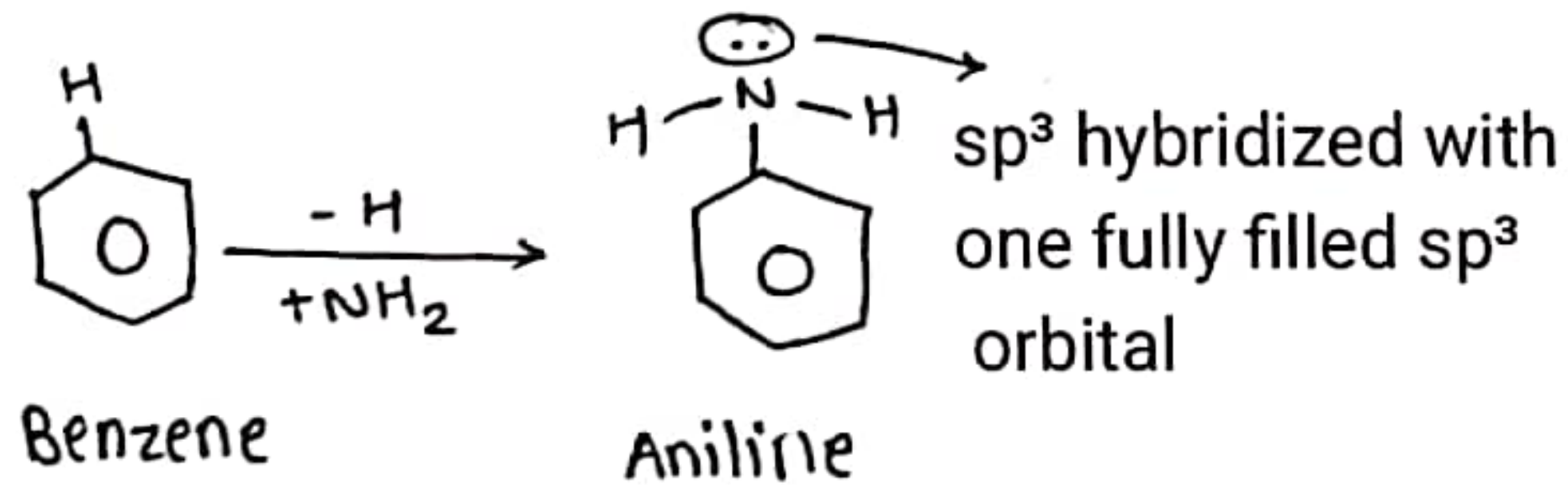


Aromatic Amines (Anilines)

Basicity of Aromatic Amines

- When a hydrogen of aromatic hydrocarbon is replaced by an amino group ($-NH_2$) is called Aromatic amines.

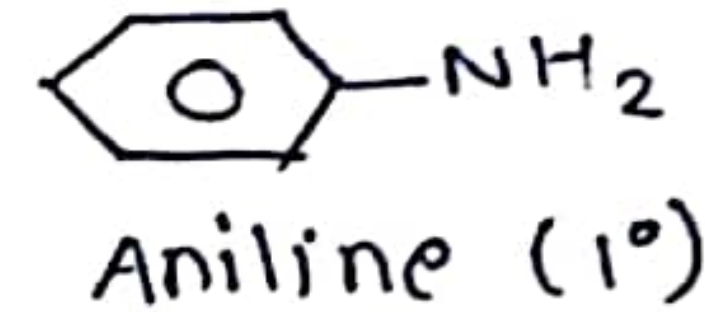


All such compounds in which an amino (or) substituted amine group is directly attach to an aromatic ring are known as Aromatic Amines.

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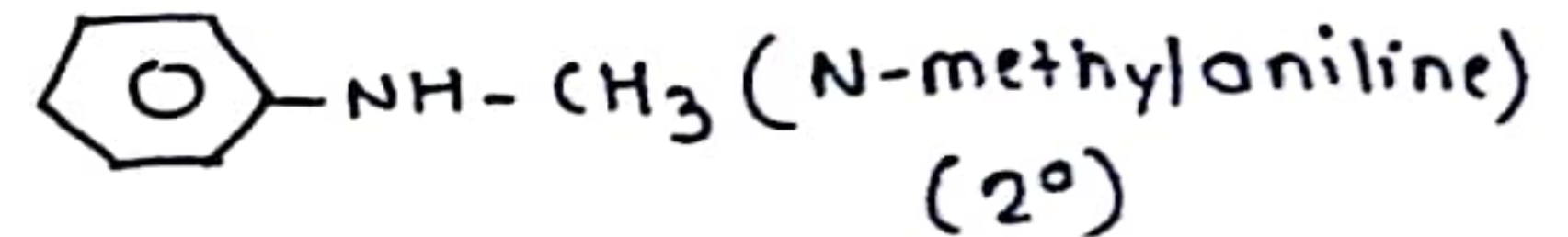
Classification

(a) primary Amine :

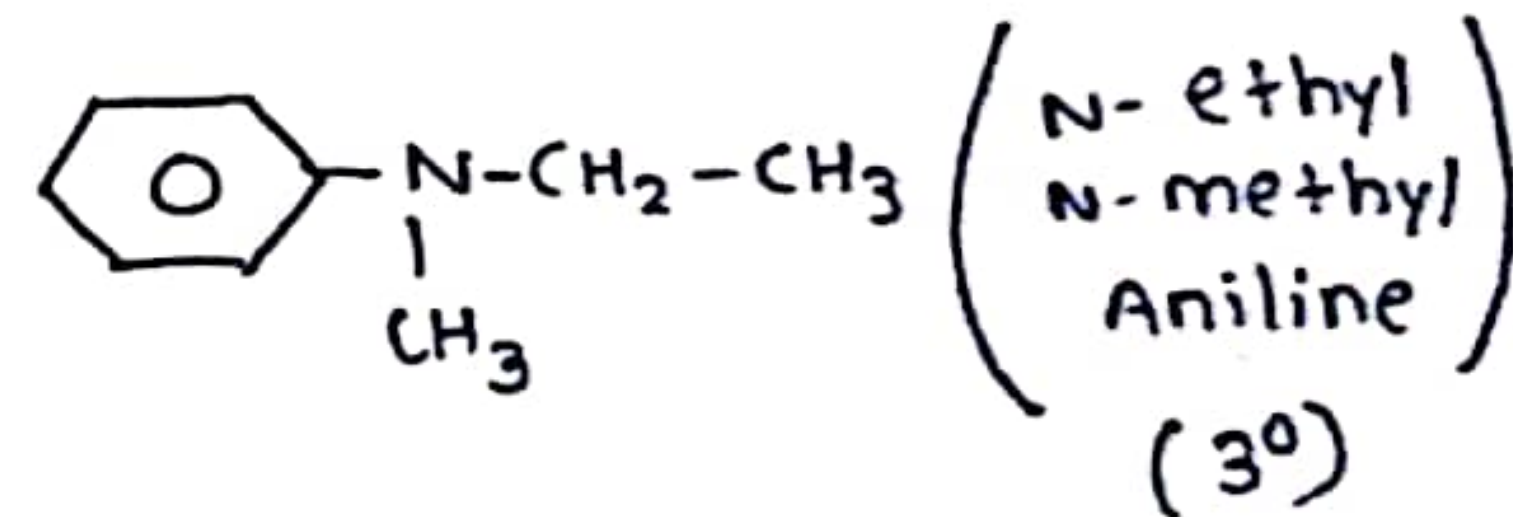


(b) Secondary Amine :

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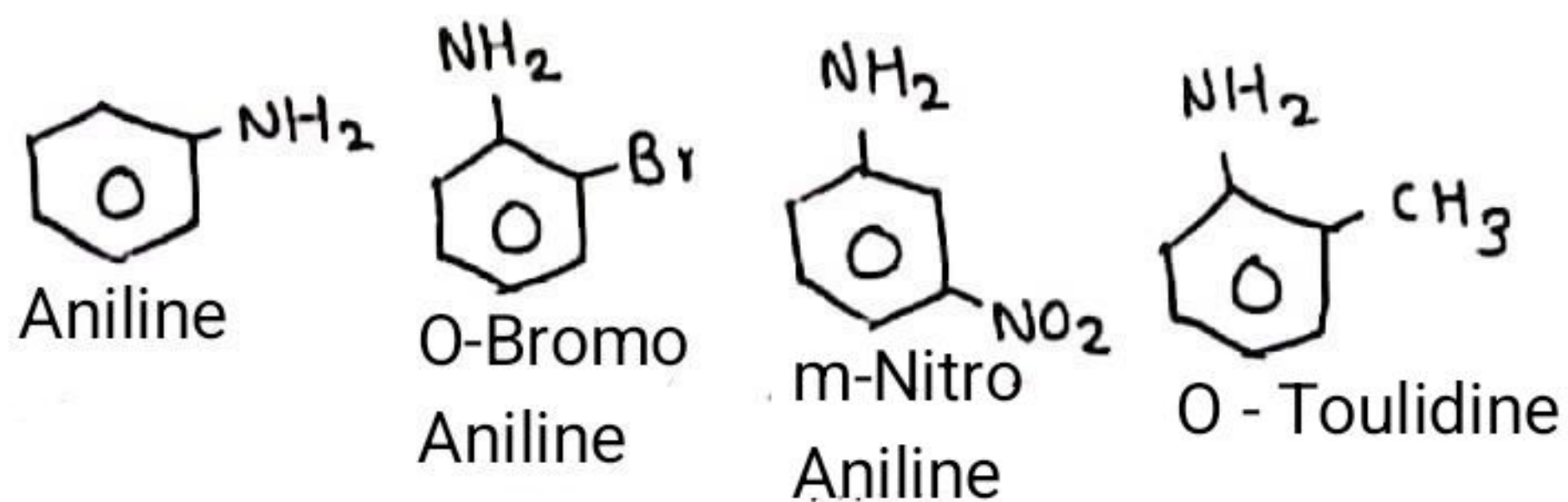
(c) Tertiary Amine :



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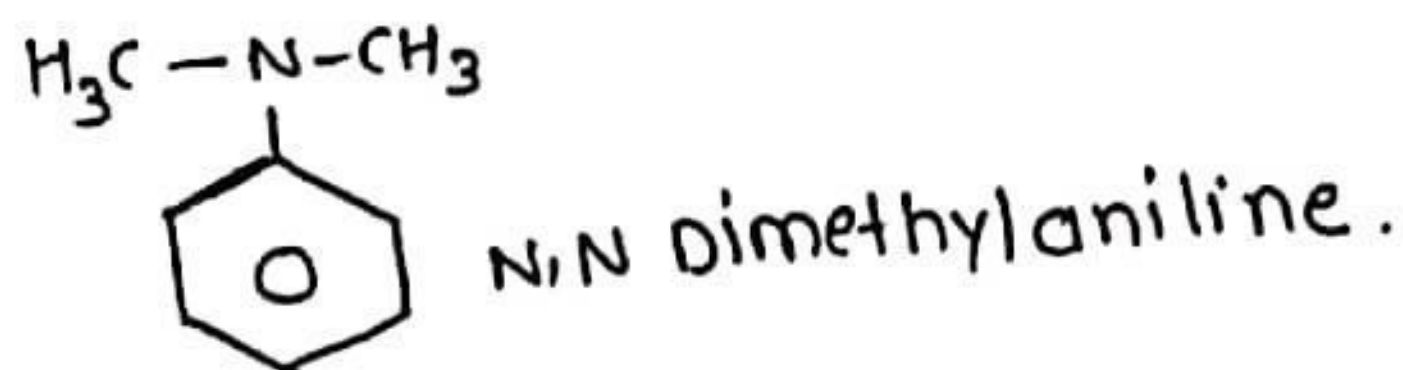
• Nomenclature:

- Aromatic amines are named as the derivative of anilines.



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- Amino toluene is named as Toluidine. Substituent on N-atom are named as prefixes with N (or) N,N.



• Basicity of Aniline:

- When we compare K_b values of aliphatic amines with aniline, it is clearly seen that aniline is less basic than aliphatic amines.

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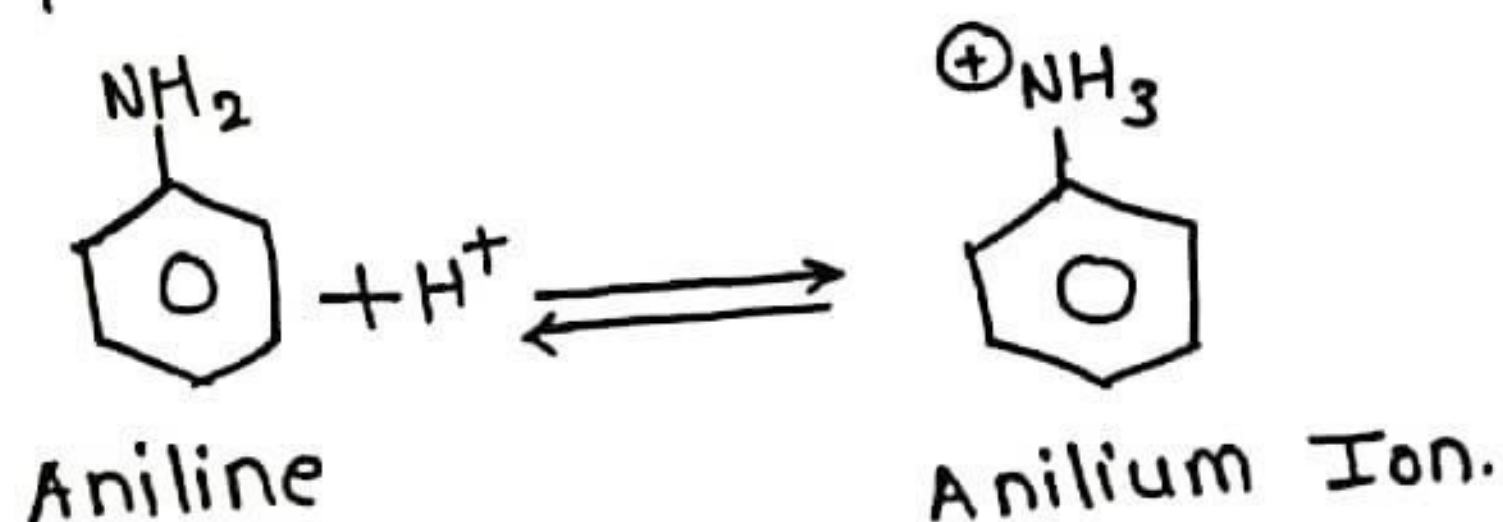
K_b value for Methylamine (CH₃NH₂) is $\rightarrow 4.4 \times 10^{-4}$

while,

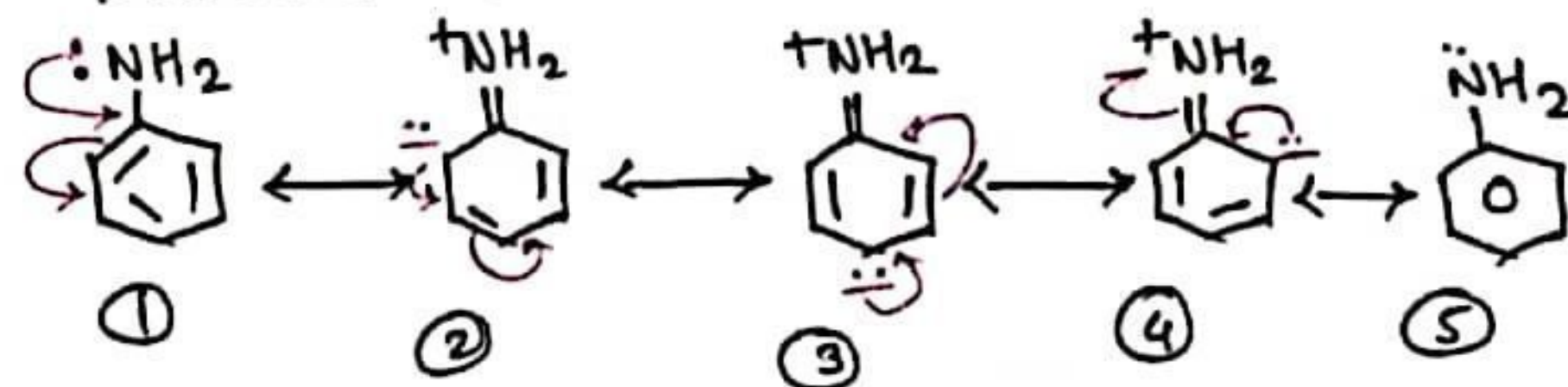
K_b value for Aniline (C₆H₅NH₂) is $\underline{4.2 \times 10^{-10}}$

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- The basicity of a compound is a measure of a compound's ability to accept a proton (H⁺).



- Aniline's Nitrogen non-bonding e⁻ pair is delocalised into the Benzene ring by Resonance.

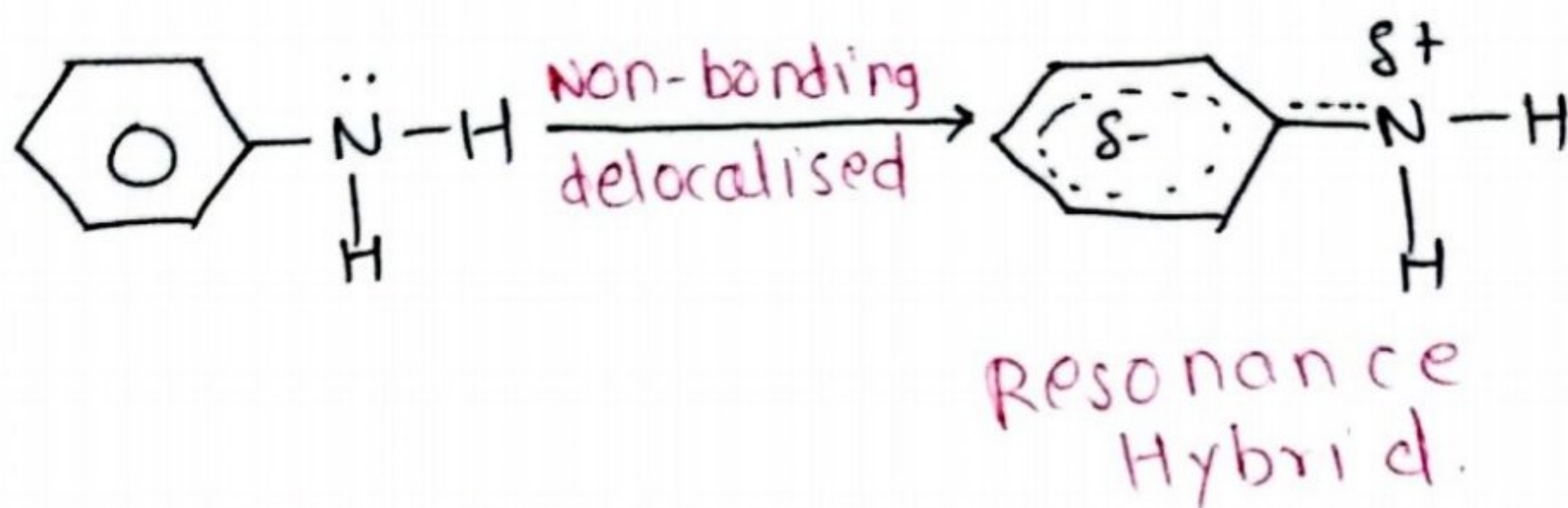


[DEPTH OF BIOLOGY]

(11)

[DEPTH OF BIOLOGY]

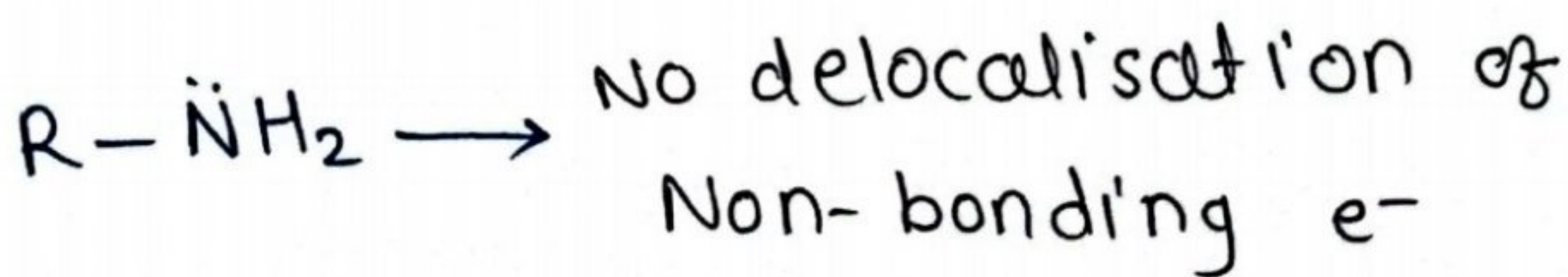
We can say that,



Due to the delocalisation of e^- over the ring the Nitrogen atom is less available for protonation while in aliphatic amine the non-bonding e^- are fully localized of Nitrogen.

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$\Rightarrow$ so, aromatic amines are less basic. then Aliphatic amines. — NO Resonance.



[DEPTH OF BIOLOGY]