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Designation: Professor

Department: Pharmacy

Subject: Pharmaceutical Organic Chemistry III
(BP401T)

Unit: V

Topic: Reaction of synthetic importance

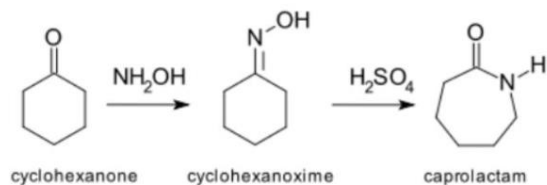
“WORKING TOWARDS BEING THE BEST”

Part- II

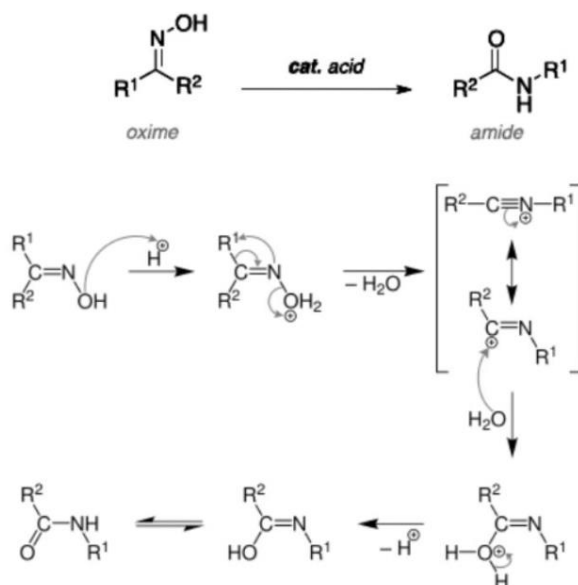
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- Beckmann rearrangement reaction
 - Schmidt Reaction

❖ Beckmann Rearrangement Reaction

- The *Beckmann rearrangement* is an organic reaction used to convert an **oxime** to an **amide** under *acidic conditions*.



- *Reaction mechanism*

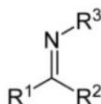


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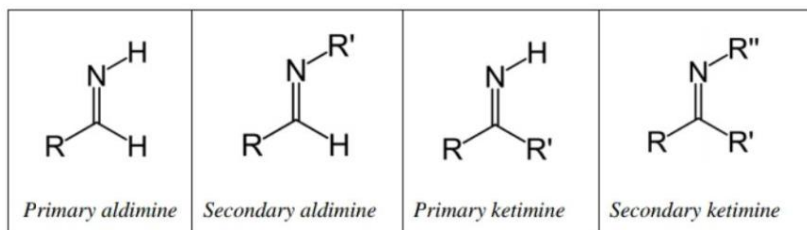
IMINE

- ✓ An **imine** is a functional group or chemical compound containing a **carbon–nitrogen double bond**.



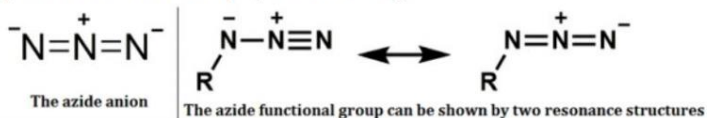
Imine

- ✓ A **primary imine** in which C is attached to both a hydrocarbonyl and a H is called a **primary aldimine**.
- ✓ A **secondary imine** with such groups is called a **secondary aldimine**.
- ✓ A **primary imine** in which C is attached to **two hydrocarbonyls** is called a **primary ketimine**; a **secondary imine** with such groups is called a **secondary ketamine**.



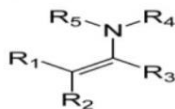
AZIDE

- ✓ Azide is the anion with the formula N^{3-} . It is the conjugate base of hydrazoic acid (HN_3). N^{3-} is a linear anion.
- ✓ The dominant application of azides is as a propellant in air bags.



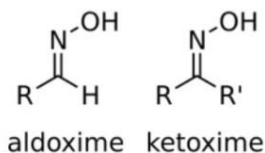
ENAMINE

- An **ENAMINE** is an unsaturated compound derived by the condensation of an aldehyde or ketone with a secondary amine



OXIME

- An **oxime** is a chemical compound belonging to the imines, with the general formula $\text{RR}'\text{C}=\text{NOH}$, where **R** is an organic side-chain and **R'** may be hydrogen, forming an **aldoxime**, or another organic group, forming a **ketoxime**.



Schmidt Rearrangement

❖ Schmidt Rearrangement

- The Schmidt reaction is an organic reaction in which an **azide** reacts with a **carbonyl group** to give an **amine** or **amide**, with expulsion of nitrogen.
- It is named after *Sir Karl Friedrich Schmidt*.
- **Reaction Mechanism**

