



- \*  Application of IR
- \*\*  Scissoring v/s Rocking
- \*  Hooke's law
- Fundamental absorption in  $\text{CO}_2$
- Overtones & Coupling peaks in IR
- Rocking v/s Twisting
- \*  Factor influencing vibrational freq.
- \*\*  Fermi resonance
- \*  Selection rule of IR
- Fingerprint region in IR
- Effect of resonance on vibrational freq.
- Using IR differentiate  $\text{C}_6\text{H}_5\text{OH}$  &  $\text{C}_6\text{H}_5\text{COCH}_3$ .
- \*  Using IR differentiate aliphatic v/s Aromatic Compds.
- Pure acetic acid is glacial acetic acid why.
- \*  Hydrolysis of ester with mechanism
- Preparation of acid using Grignard reagent
- (i) Benzoic acid  $\rightarrow$  Benzaldehyde
- (ii) Benzene  $\rightarrow$  Acetophenone (iii) Benzene  $\rightarrow$  Benzoic acid
- \*  Decarboxylation of Carboxylic acid
- Acetyl chloride is more readily hydrolysed by water or dil.  $\text{NaOH}$  than benzyl chloride.
- Arrange  $\rightarrow$   $\text{CH}_3\text{COOH}$ ,  $\text{ClCH}_2\text{COOH}$ ,  $\text{Cl}_2\text{CHCOOH}$ .
- \*  Esterification with mechanism
- Effect of substituents on acidic strength in acids
- \*\*  HVZ reaction
- \*\*  Nucleophilic attacking reactivity of acid derivatives
- \*  Hoffmann's Bromamide rxn.
- \*\*  Phenol v/s Carboxylic acid (Acidic strength)
- \*\*  Stability of Carboxylic acid derivative

blunsdiecker test<sup>n</sup>

Rosenmund's test<sup>n</sup>

Schotten Baumann test<sup>n</sup>

Acidic strength or activity of Carboxylic acid (Aromatic & Aliphatic)

Effect of nitro group on the acidic strength Benzoic acid

Carboxylic acid do not give test of Carbonyl group

## II

□ Test<sup>n</sup>

★★ (i) Gabriel phthalimide test<sup>n</sup>

(ii) Bab-Schieman test<sup>n</sup>

★★★ (iii) Coupling test<sup>n</sup>

(iv) HVZ test<sup>n</sup>

(v) Sandmeyer test<sup>n</sup>

★★ (vi) Hofmann ammonolysis test<sup>n</sup> (vii) Hofmann Bromamide test<sup>n</sup>

□ (i) ethylamine  $\begin{cases} \rightarrow \text{Ethanol} \\ \rightarrow \text{Diethylamine} \end{cases}$

(ii) Methylamine from Acetic acid

(iii) ethylamine from Methyl bromide

★ (iv) Benzaldehyde  $\rightarrow$  Benzylamine

★★★ □ Basic strength of 1°, 2° & 3° Amines & aniline

□ Aniline v/s ethylamine basic strength.

□ Aniline with (i) Br<sub>2</sub> water (ii) Benzene sulphonyl chloride

□ Separation of 1°, 2°, 3° amines by

★★★ (i) Hoffmann's method

★★★ (ii) Hinsberg reagent test

★★ □ Preparation of Aniline (Hofmann's bromamide test<sup>n</sup>)

Diazotization test<sup>n</sup> with mech.

★★ □ Aniline  $\rightarrow$  1,3,5-tri-bromobenzene } Aniline  $\rightarrow$  p-nitroaniline

Basic character of Aliphatic v/s Aromatic amines