

Daily Tutorial Sheet-1

Level-1

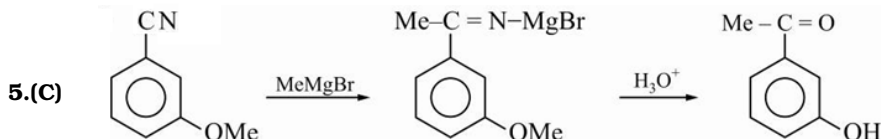
1.(A) $(\text{HCOO})_2\text{Ca} + (\text{CH}_3\text{COO})_2\text{Ca} \longrightarrow \text{CH}_3\text{CHO}$ (Visualise cross product)

B : CH_3COPh C : CH_3COCH_3 D : PhCOPh

2.(C) $\text{C}-\text{C}=\overset{\text{C}}{\overset{\text{C}}{\text{C}}}-\text{C}=\text{C} \xrightarrow[\text{Zn}]{\text{O}_3} \text{C}-\text{CHO} + \text{C}-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}-\text{CHO} + \text{HCHO}$

3.(B) $(\text{HCOO})_2\text{Ca} + (\text{CH}_3\text{COO})_2\text{Ca} \xrightarrow{\Delta} \underset{\text{Major}}{\text{CH}_3\text{CHO}} + \underset{\text{(Minor Products)}}{\text{HCHO} + \text{CH}_3\text{COCH}_3}$

4.(C) Gattermann Koch Synthesis.



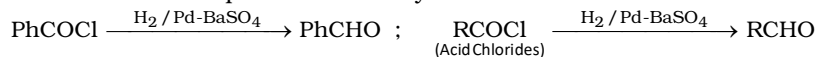
* OMe (ether) group will also be hydrolysed.

6.(BD) Only aldehydes can be prepared by reduction of ester using DIBAL-H

7.(C) $\text{C}-\text{C}-\overset{\text{OH}}{\text{C}}-\text{C}-\text{C} \xrightarrow[\text{CH}_3\text{COCH}_3]{(\text{Me}_3\text{C}-\text{O})_3\text{Al}} \text{C}-\text{C}-\overset{\text{O}}{\text{C}}-\text{C}-\text{C}$

(Oppenauer oxidation) : 2° alcohols are oxidised to ketones.

8.(A) Rosenmund Reduction : Preparation of Aldehydes



9.(D) A : Gattermann koch B : Fries rearrangement C : Etard reaction

10.(AB) $\text{C}-\overset{\text{OH}}{\text{C}}-\text{C}=\text{C}-\text{C} \longrightarrow \text{C}-\overset{\text{O}}{\text{C}}-\text{C}=\text{C}-\text{C}$

A : PCC is good oxidising agent as it does not oxidise ketones & carbon-carbon double bond.

B : Chromic anhydride in acetic acid can also do this. Others will oxidize carbon-carbon double bond.

11.(B) $(\text{CH}_3\text{COO})_2\text{Ca} + (\text{CH}_3\text{CH}_2\text{COO})_2\text{Ca} \xrightarrow{\Delta} \text{CH}_3-\text{CO}-\text{CH}_2\text{CH}_3$
2-butanone

Note : $(\text{RCOO})_2 + (\text{R}'\text{COO})_2\text{Ca} \xrightarrow{\Delta} \text{RCOR}'$

12.(D) X is mild oxidizing agent. It can be MnO_2 PCC etc.

13.(A) $\text{Ph}-\text{C}\equiv\text{C}-\text{Me} \xrightarrow[\text{Hg}^{2+}/\text{H}^+]{\text{H}_2\text{O}} \text{Ph}-\overset{\text{O}}{\text{C}}-\text{CH}_2\text{Me}$ Phenyl ketone is major product here.

14.(B) DIBAL-H reduces esters to an aldehyde. It reduces cyanides to amines (not to aldehydes) ; however amines are hydrolysed to aldehydes.

15.(C) X : CH_3CHO Y : $\text{CH}_3\text{CH}_2\text{OH}$