AXIS BANK

DATE:

Name Reaction

Friedel Craft Reaction :-

The reaction of alkyl halide with benzene in presence of lewis acid e.g. $AlCl_3$ is known as F.C. Reaction. It can be devided into alkylation and acylation.

Alkylation — The alkylation of benzene with primary alkyl halide with the formation of polar addition compound between $AlCl_3$ and R-Cl. The function of $AlCl_3$ is to supply electron deficient species as follow

Step I — $CH_3Cl + AlCl_3 \rightarrow \overset{+}{C}H_3 - Cl - AlCl_3$

$\overset{+}{C}H_3 + AlCl_4^-$

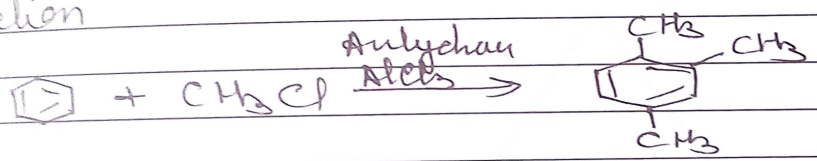
Step II —

The electrophile attacks benzene ring to

give carbonium ion.

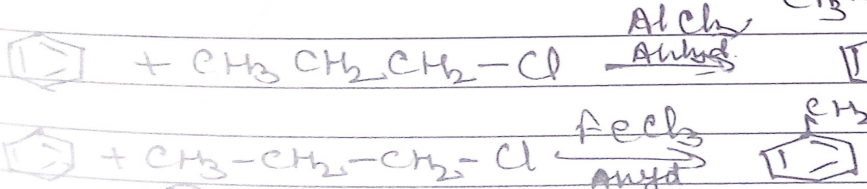
Step III - Loss of proton

Drawback → Alkyl group is -O, -P directing they further favour substitution by polyalkylation



Sometimes rearrangement product is obtained

Alkylation of n-propyl chloride gives iso-propyl chloride benzene

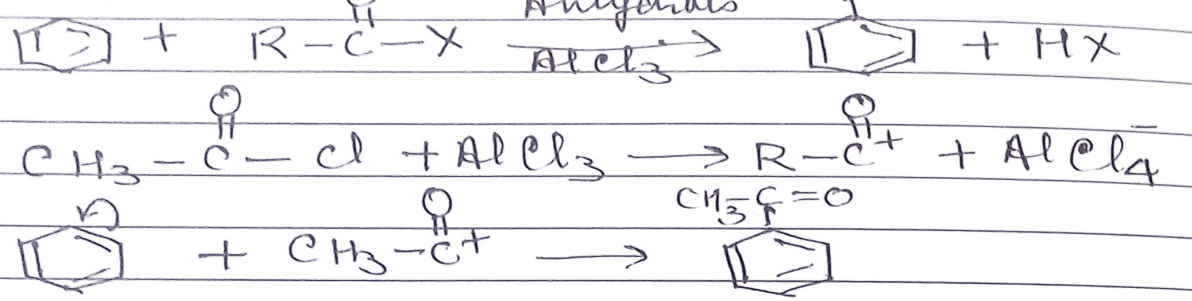


$CH_3-CH_2-\overset{\oplus}{C}H_2 + Cl^-$ [No rearrangement occur due to

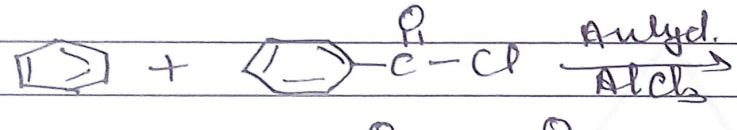
DATE:

$FeCl_3$ is not so strong.

F.C. Acylation :- $R-C^{+}=O$



There is no carbocation is formed

1. 

2.