

For- B.sc II Hons. Paper III (C)

Electrophilic substitution in
Aromatic compound

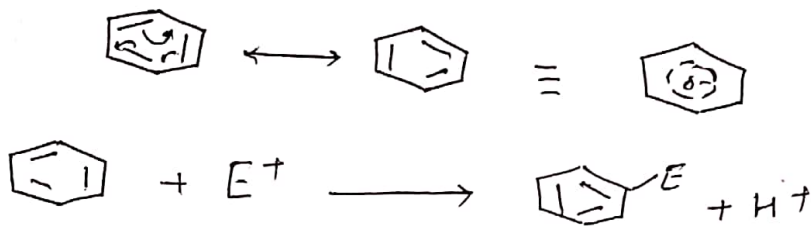
By-Dr.S R Haider

H.O.D chemistry

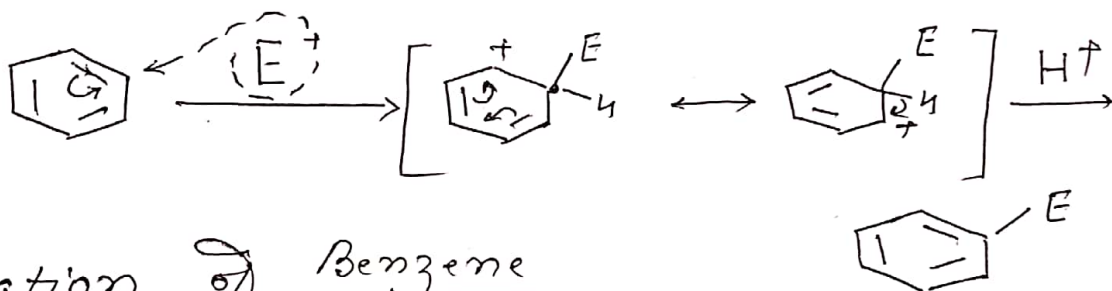
Oriental college

Electrophilic Substitution in Aromatic Compound

Being high electron density in benzene ring it prefer electrophilic substitution reaction i.e. S_E reaction

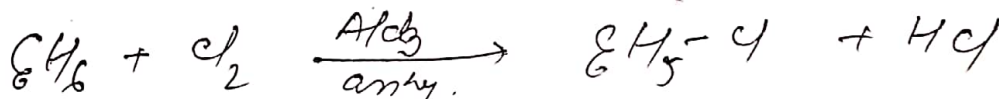


Mechanism:

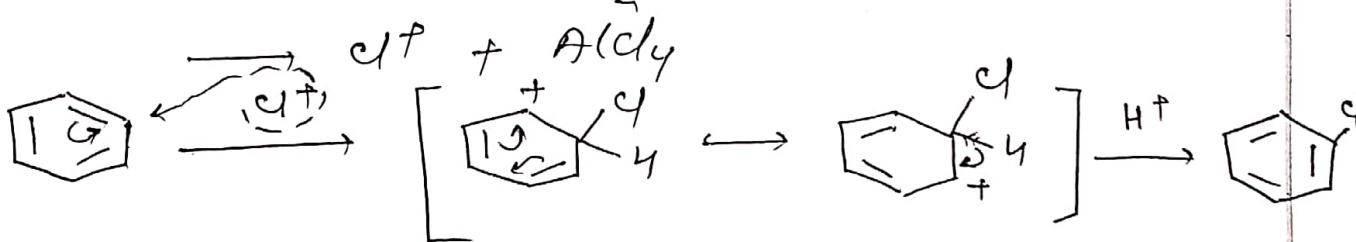
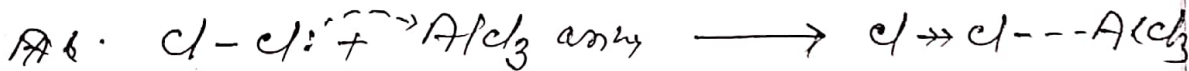


① Chlorination of Benzene

Benzene when react with chlorine in presence of anhyd. $AlCl_3$ (cat.), chlorobenzene is obtained



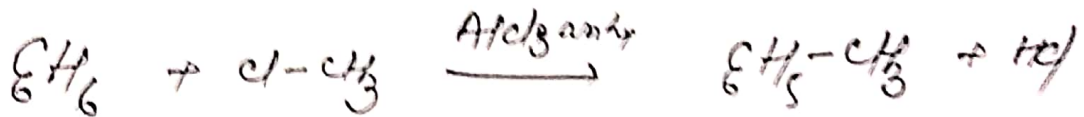
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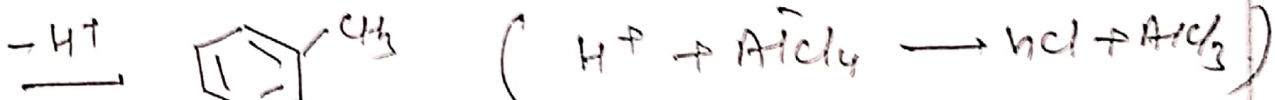
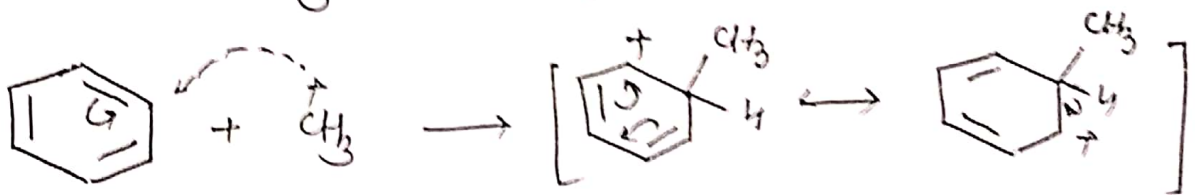
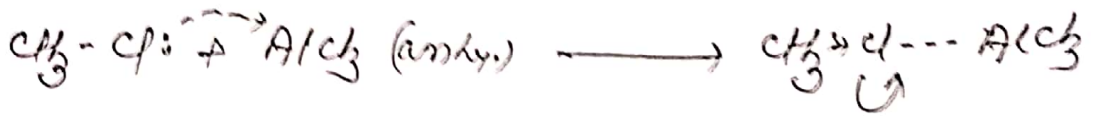
② Alkylation of Benzene

Benzene react with $\text{CH}_3\text{-Cl}$ in presence of AlCl_3 (anhyd.) it gives Toluene.

This reaction is called methylation (Alkylation) of Benzene



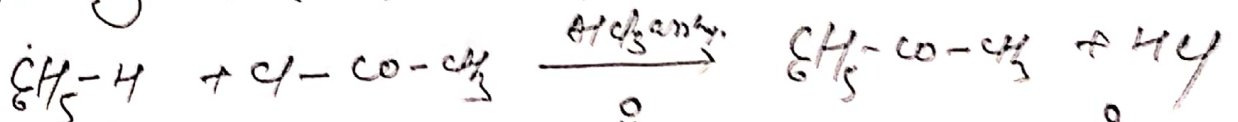
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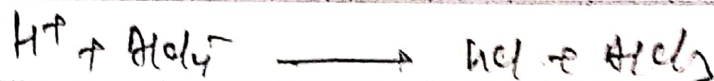
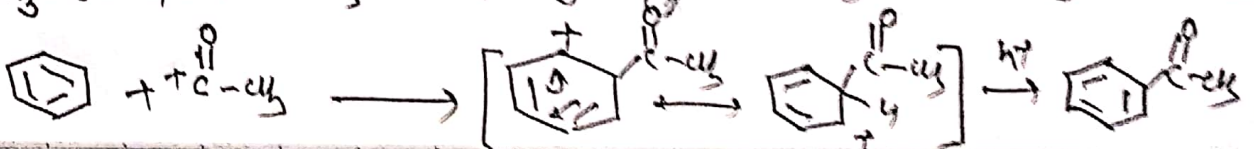
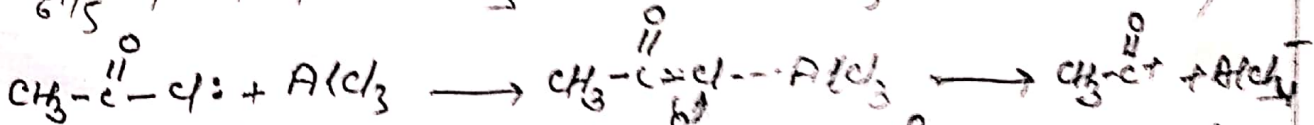
③ Acetylation of Benzene

Benzene when reaction with acetyl chloride

$(\text{CH}_3\text{-CO-Cl})$ in presence of AlCl_3 (anhyd.) it gives acetylbenzene ($\text{C}_6\text{H}_5\text{-CO-CH}_3$).

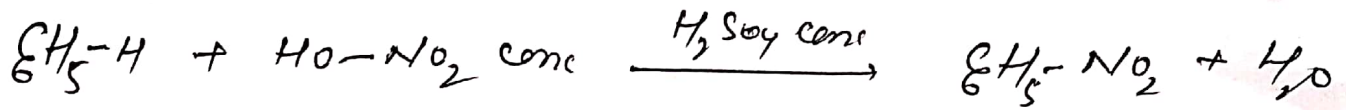


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9 Nitration of Benzene

Benzene react with HNO_3 conc and H_2SO_4 conc, Nitrobenzene is obtained as main product.



Mech:

