

Class - P.G. Sem. II

Subject - Chemistry

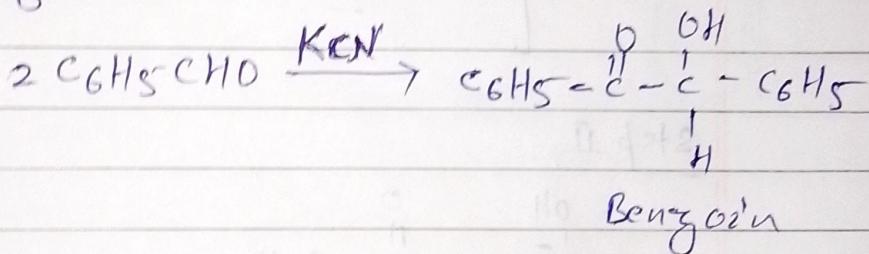
Paper - C.C VIII

Unit - I

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## Benzoin condensation ! -

The reaction of aromatic aldehyde with aqueous ethanolic KCN or NaCN to form  $\alpha$ -hydroxy Ketone is known as Benzoin condensation. Thus Benzaldehyde gives Benzoin.

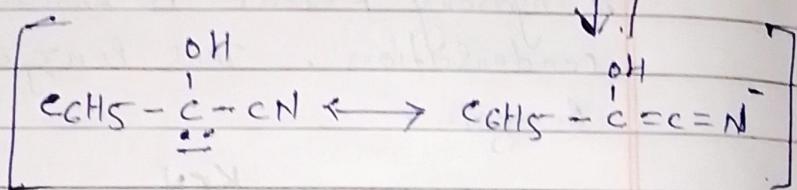
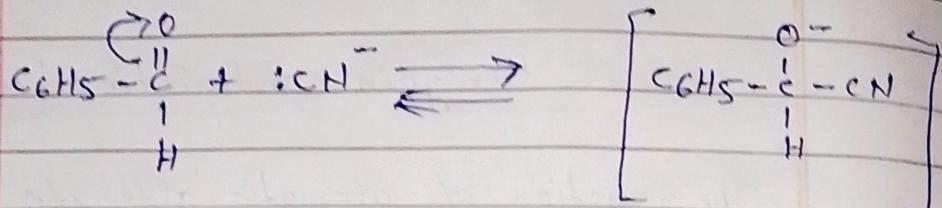


Mechanism! - Firstly the nucleophile cyanide ion adds to carbonyl carbon of first molecule of aldehyde. The cyanide ion - oxidizes H-atom of aldehyde (former) giving resonance stabilised carbanion.

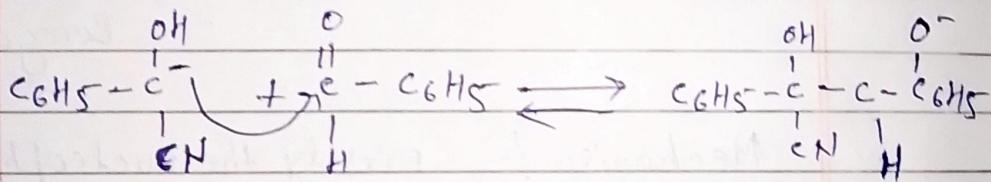
The carbanion thus generated attacks carbonyl carbon of second aldehyde molecule forming an unstable cyanohydrine of Benzoin which

Immediately breaks down into Benzoin and hydrogen cyanide.

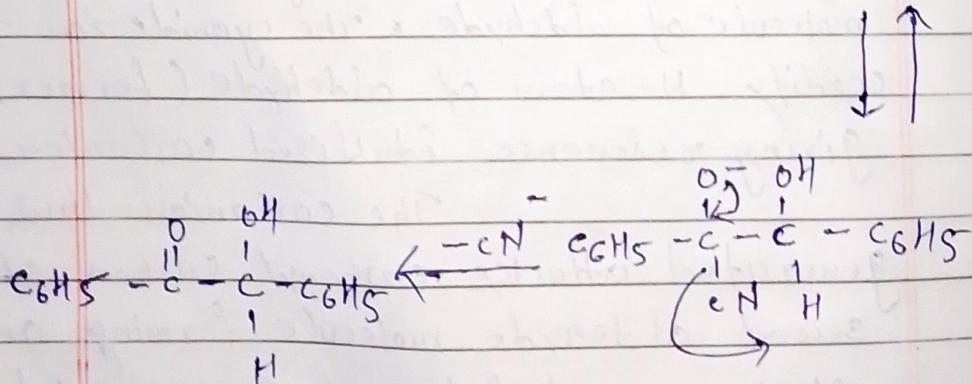
Step I :-



Step II



Intermediate



Benzoin