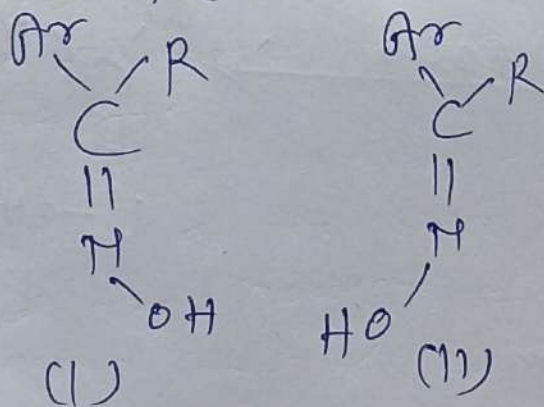


Class - B.Sc semester I st.

Subject - organic chemistry

Topic Name: $\rightarrow$ Stereochemistry

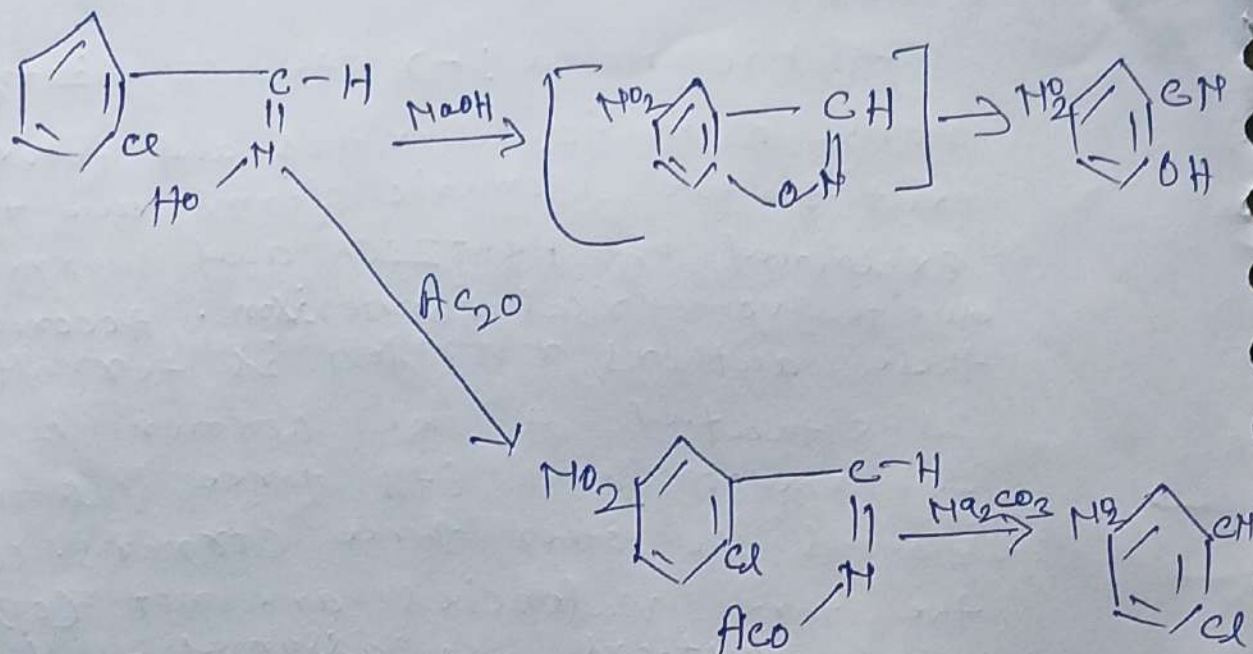
many aromatic aldoximes and ketoximes exist in two isomeric forms. and this was explained by Hantzsch and Werner as being due to geometrical isomerism. According to these authors nitrogen is trivalent and is situated at one corner of a tetrahedron with its three valencies directed towards the other three corners. Consequently the three valencies are not coplanar. These authors also assumed that there is no free rotation about the $C=N$ bond. and therefore proposed configuration (I) and (II) for two isomers.



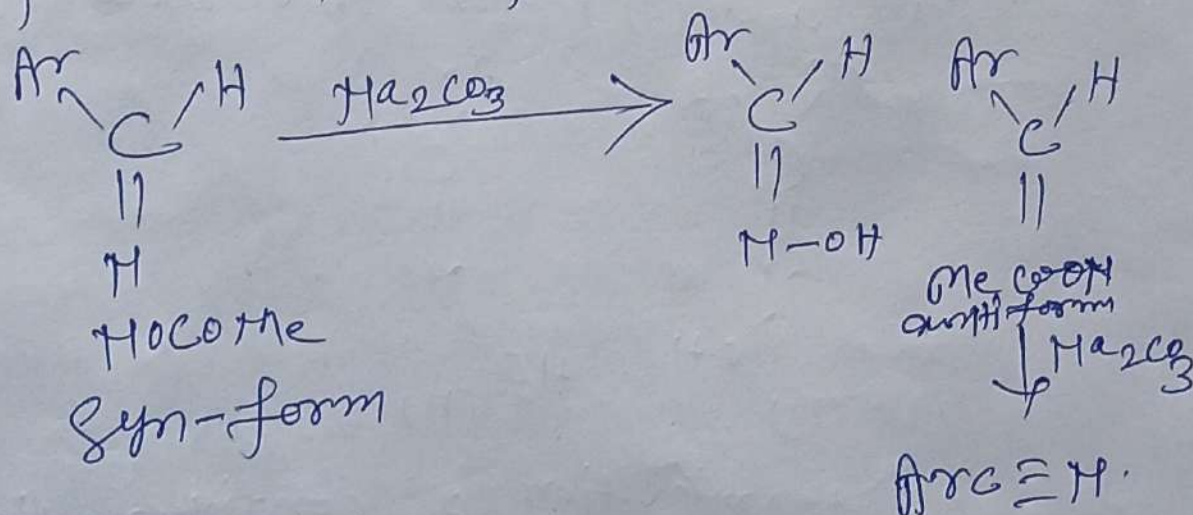
Determination of configuration

~~At~~ Aldoximes: The two isomeric aldoximes may be distinguished by the behaviour of their acetyl derivatives towards aqueous carbonates one given the oxime back again and the other forms the cyanide $ArCN$.

page (2), it was this isomer that give the cyanide. Thus showing that anti-elimination must have occurred.



→ Thus the general reaction may be formulated as follows: the anti-oxime



Beckmann rearrangement: when treated with reagents such as phosphorus pentachloride, sulphuric acid, polyphosphoric acid aromatic ketoximes undergo the Beckmann rearrangement to form an acid amide.

$$Ar-C(=O)-NHOH \xrightarrow{HCl} ArCONHAr.$$
