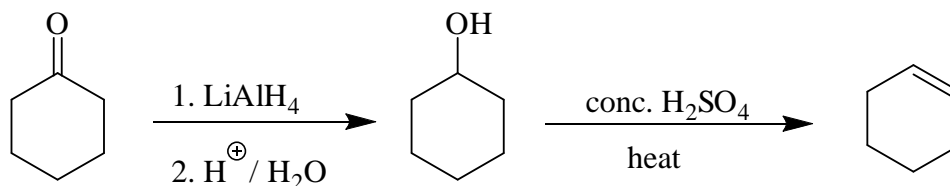


Marks
6

- Show clearly the reagents you would use to carry out the following chemical conversion. Exactly one intermediate compound and hence two steps are required. Give the constitutional formula of the intermediate compound.



How could you distinguish between the starting material, the intermediate compound and the final product using infrared spectroscopy?

The starting material shows strong absorbance in the infrared, around 1700 cm^{-1} due to the carbonyl (C=O) group.

The intermediate shows strong and broad absorbance in the infrared, around 3500 cm^{-1} due to the alcohol (O-H) group.

The final product has no absorbance in these two regions of the infrared spectrum. (The C=C bond will absorb quite weakly around 1400 cm^{-1} .)