30 - Design and Materials

(Q-1) Chirality in pharmaceutical synthesis.

> Most drugs contain atleast one chiral centre. It can exist as two optical isomers (mirror image) which are known as enantiomers.

Most chiral drugs extracted from natural resources often contain a single optical isomer.

One enantiomer can be useful, while the other may be harmful.

Producing drugs consisting of a single optically active isomer is beneficial because:

- minimises risk of side effects
- patient can be given smaller doses if all the drug is active.
- it's cheaper since it'll be a waste of money producing a drug half of which won't be useful.

Pure enantiomers can be prepared by:

- optical resolution
- using optically active starting materials.
- using chiral catalysts.