

HALOALKANES AND HALOARENES ^{1.}

21-05-2020

Lecture-8

Class-XII

Topic - Optical Isomer

Unit -10

Compounds having same molecular formula but have different behaviour towards plane polarised light are called optical isomers.

Plane Polarised light :-

Light wave vibrating in a single plane is called plane polarised light.

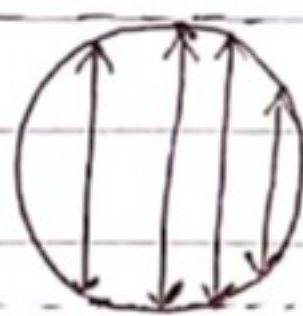
* Plane polarised light is produced by passing ordinary light through Nicol Prism.



Normal light



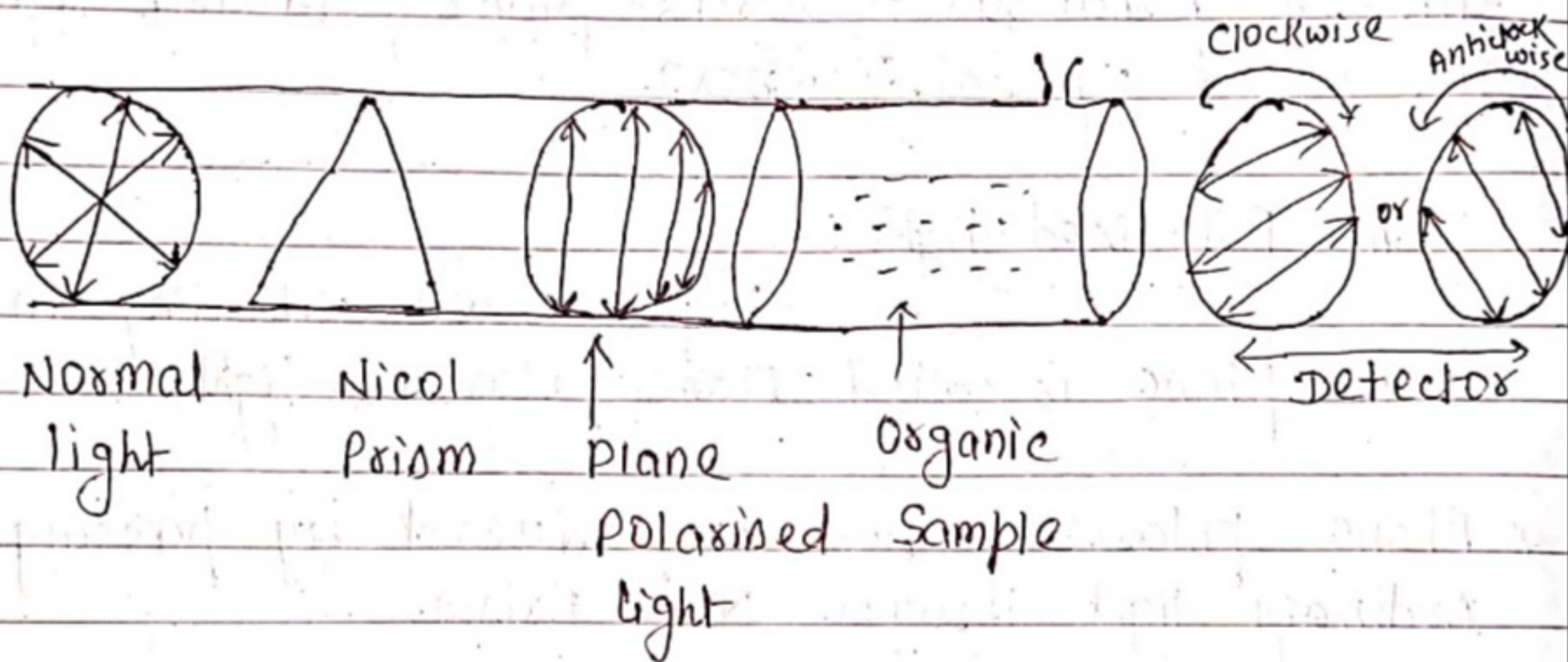
Nicol Prism



Plane Polarised light

The compounds which do not rotate plane polarised light are called optically inactive compounds.

The angle by which the plane polarised light is rotated is measured by an instrument called Polarimeter.



* The optically active compounds which rotate plane polarised light to the right i.e., clockwise direction, is called dextro rotatory or dextro or d or $(+)$.

* The optically active compounds which rotate plane polarised light to the left i.e., anticlockwise direction, is called laevo rotatory or laevo or l or $(-)$.

* The fixed relative spatial arrangement of atoms in a molecule is known as configuration.

* The stereoisomers that can be converted into one another by rotation about carbon-carbon single bond are called conformations.

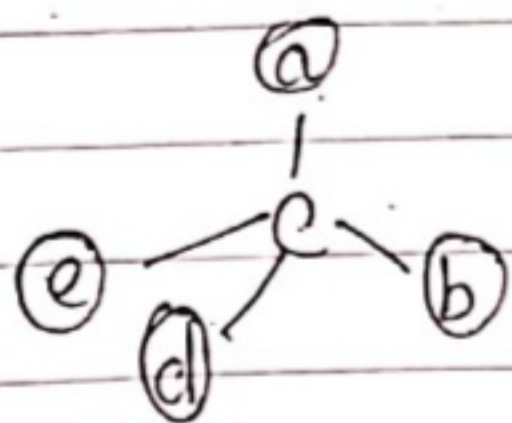
To be optically active

* Compound must be tetrahedral.

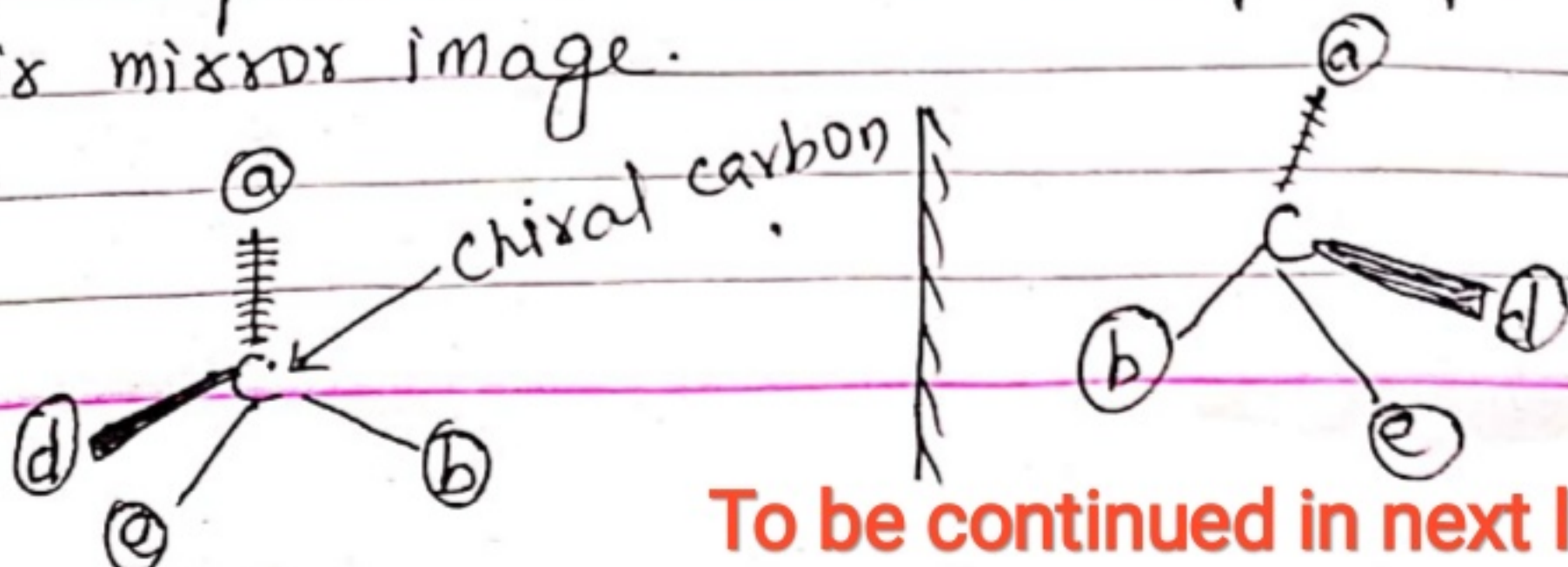
* Compound must be chiral.

* i.e.; compound must have at least one chiral carbon, (asymmetric carbon or stereocentre)

* A carbon atom bonded to four different atom/groups in a molecule is called chiral carbon.



The compound must not be superimposable on their mirror image.



To be continued in next lecture..