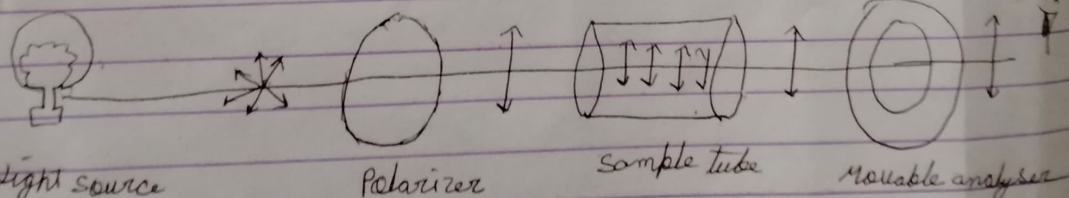
B.Sc - II 2/2/21

Polarimeter →

Instrument measures the rotation of polarized light as it passes through an optically active substance and the tendency of the molecule to rotate the plane polarized light towards clock-wise or anti clock wise direction whose extent of the rotation can be measured.

In principle a pair of crossed polarizers may be used as polarimeter. No light will emerge from such a combination.

If an optically active substance is introduced between them, the plane of polarization of the light emerging from it may be rotated by a certain angle (let it be α) and the second polarizer will not be able to block the light now. The second polarizer will have to be rotated by an angle α in the same sense to make the field of view dark again. The angle of rotation can thus be measured by fitting a circular scale to the second polarizer



$$[\alpha]_\lambda^T = \frac{\alpha}{l \cdot c}$$

$[\alpha]_\lambda^T$ = Specific rotation, λ = wavelength of light
T = Temperature, α = observed rotation in degrees,
l = cell path in decimeters,
c = concentration (gm/100ml)