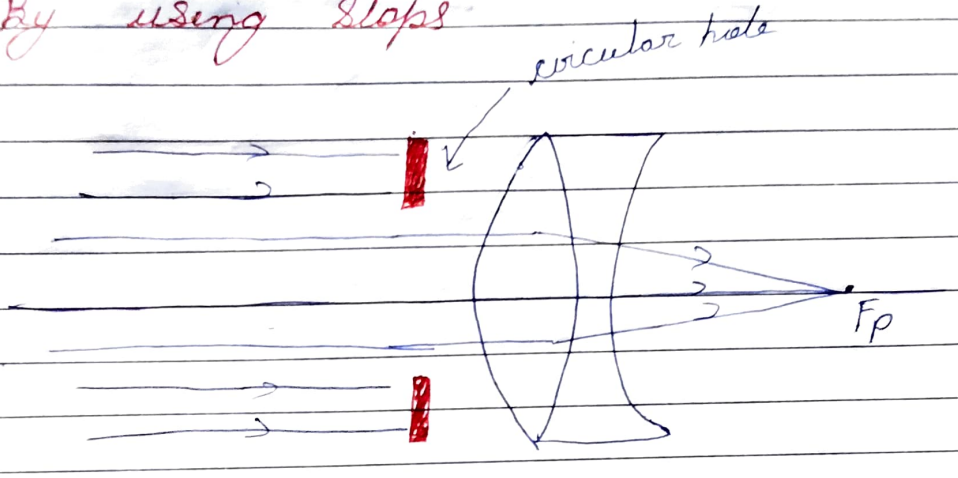
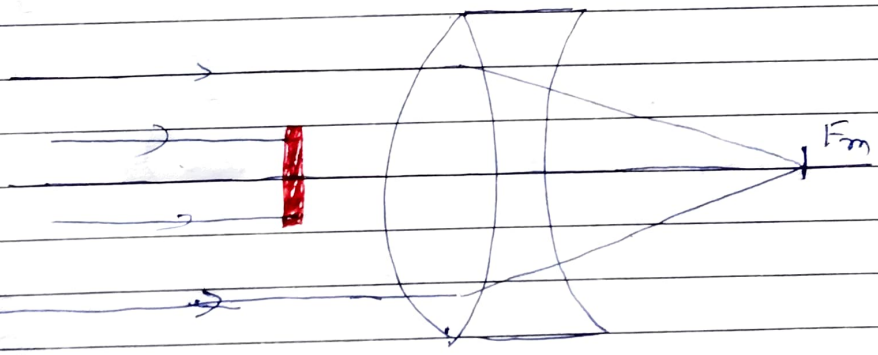
B.Sc Part - II

Methods of reducing spherical Aberration.

(i) By using Stops



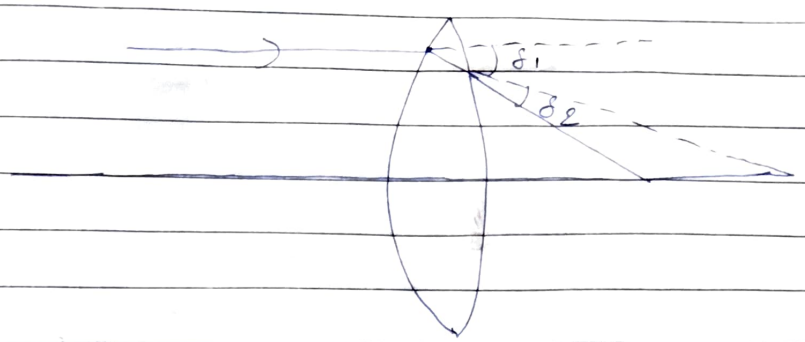


Spherical aberration can be minimised by using stops which reduce the effective lens aperture. The stop used can be such as to permit either the axial rays or the marginal rays of light.

⇒ Since the amount of light is reduced the image appears bright

(ii) By using plano convex lens. →

directly proportional to square of deviation angle



$ASA \propto \delta^2$

For a lens

$ASA \propto (\delta_1 + \delta_2)^2$

$[(A+B)^2 = (A-B)^2 + 4AB]$

$ASA \propto ((\delta_1 - \delta_2)^2 + 4\delta_1\delta_2)$

If $\delta_1 = \delta_2$ than

$ASA \propto (4\delta_1\delta_2)$

It mean if $\delta_1 = \delta_2$ than ASA is decrease

This fact is followed by plano convex lens.