

- 1) A zone plate has radius of the first ring 0.06 cm . If plane waves ($\lambda = 6000 \text{ \AA}$) fall on the plate, where should the screen be placed so that the light is focussed to a bright spot?
- 2) A parallel beam of monochromatic light is incident normally on a thin plate having a small circular hole of diameter 1 mm . Determine the wavelength of the light used if it is observed that the screen has to be moved through 10 cm from its position where the centre is dark to the next similar position.
- 3) What is a zone plate
Show that it has multiple foci.
- 4) An object is placed at a distance of 20 cm from a zone plate and the brighter image is situated at 20 cm from the zone plate with light of wavelength 4000 \AA . Calculate the number of Fresnel's zones in a radius of 1 cm of that zone plate.