

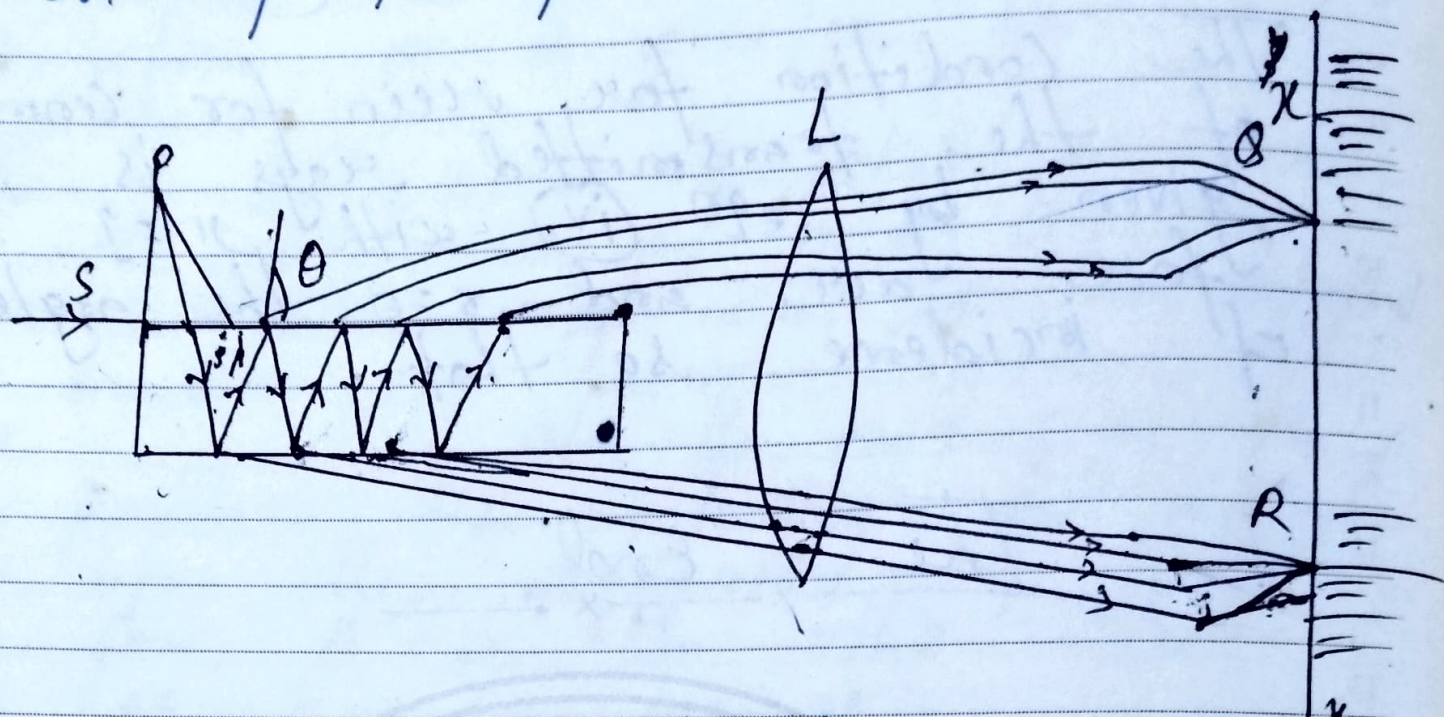
• Ques. write a short note on Lummer
Hechcke plate (L.H plate)?

5 Ans → L.H plate →

It is also a high resolving power instrument employed for the study of fine structure of spectral lines and the Zeeman effect. It consists of two accurately plane-parallel plates of quartz about 10-15 cm long, 1-2 cm wide and a few mm thick. A small totally reflecting prism P is cemented at

Notations

one of the plate.



A beam of light from an extended source enters into the plate through the prism P and meets the lower surface of the plate at an angle slightly than the critical angle. therefore, a small fraction of the light emerges out, while the rest is internally reflected. this happens many times successively at the two surface of the plate. thus a group of parallel rays leaves each surface of the plate near grazing emergence, having a constant path difference between any

two successive rays. These are collected
by a lens L to form interference
patterns in the focal plane of the
lens. Hence, two identical sets of
fringes, one from each side of
the plate, are obtained on a
screen XY placed in the focal
plane of the lens. Hence two
identical sets of the fringes are
bright, narrow maxima with
wide minima in between. When the
plate is made of quartz, it can
be used in the ultraviolet.

The — end

— x — x —