

## Experiment - 2

### Fraunhofer Diffraction.

- i) Explain any one application based on this experiment (Related to your core branch)

- Ans
- i) The universe is made up of space plasma and plasma is the fourth state of matter which contains fully ionised gases.
  - ii) Plasma waves are collective oscillation of free electrons at the metals.
  - iii) Plasma waves are studied largely for production of power.
  - iv) To study plasma waves many computers, graphics operating systems are used and to get data with high precision and accuracy. Fraunhofer Diffraction is used to enhance the precision of output data.
  - v) The improved theoretical analysis of Fraunhofer diffraction method as means to measure the frequency, wavenumber, intensity and even spatial position and propagating direction of plasma waves.

- 2) Explain any other technique or experiment other than the one performed which will achieve the result and fulfill the aim of experiment.

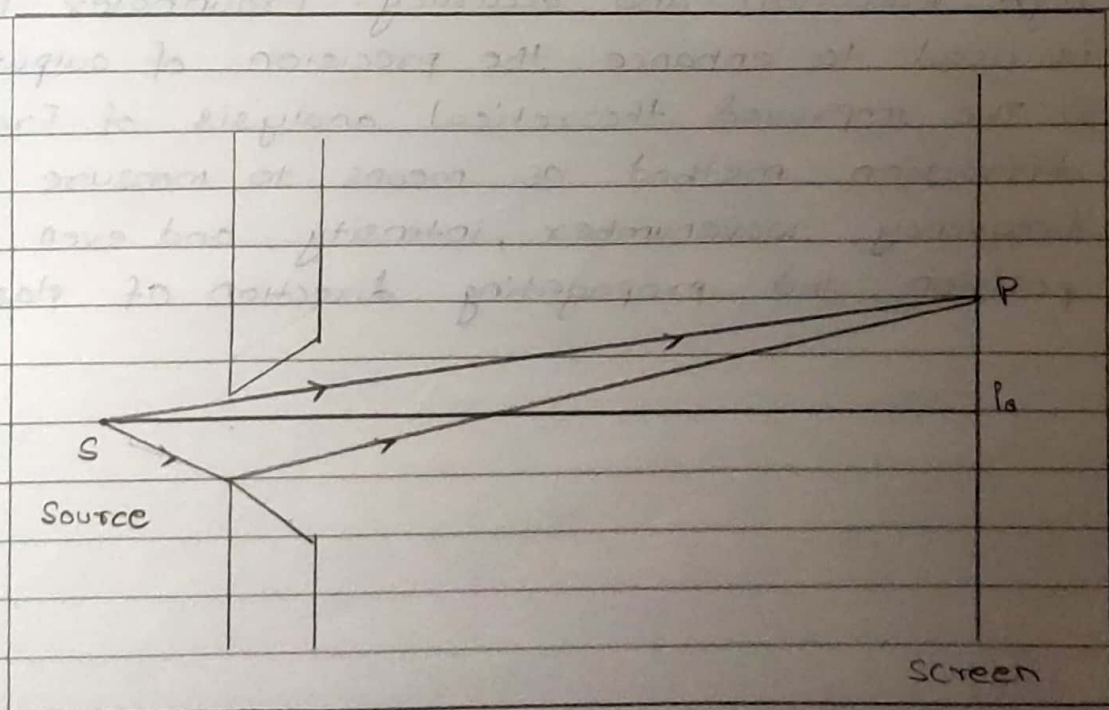
Ans. Fresnel diffraction experiment would satisfy the aim of experiment.

(i) Here, the obstacle, source and the screen are at finite distance.

2) Lenses are not needed in this experiment and the wavefronts are spherical or symmetrical.

3) A monochromatic light such as sodium vapour lamp is used as the light source.

So, our aim to find the slit width is fulfilled.



Fresnel Diffraction