

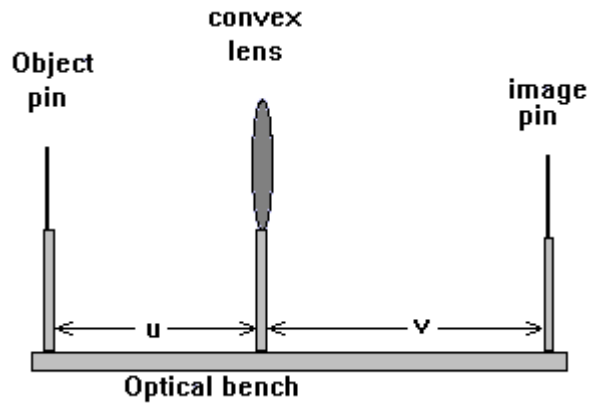
PRACTICAL:8
Focal length of Convex lens

AIM: To determine the focal length of convex lens.

APPARATUS: Convex lens, optical bench, objects and image pins, meter rule.

FURMULA: Focal length of convex lens..... $f = \frac{uv}{u+v}$ cm

FIGURE:



PROCEDURE:

- 1) Obtain a sharp image of a distant object on the wall of the laboratory with the convex lens. The distance between the convex lens and the image, measured roughly with a meter rule would give the approximate focal length of the lens.
- 2) Arrange the lens in lens holder of the optical bench. Now place the object pin. Object pin should be at zero.
- 3) Move the image pin and adjust its position till the parallax between the image pin and object pin is removed.
- 4) Record the distance u between *object pin and lens* and distance v between *image pin and lens*.
- 5) Repeat the process three times by changing the object distance u .
- 6) Calculate focal length of given convex lens with formula.

OBSERVATION:

- i) Rough focal length of convex lens.....FL = _____ cm.
- ii) Range of Optical bench = _____ cm
- iii) Least count of Optical bench = _____ cm.

OBSERVATION TABLE:

Sr. No.	Position	u cm	v cm	u + v cm	uv cm	$f = \frac{uv}{u+v}$ cm	Mean f cm
1	<i>Between F and 2F</i>						
2	<i>Between F and 2F</i>						
3	<i>On 2F</i>						
4	<i>Beyond 2F</i>						
5	<i>Beyond 2F</i>						

RESULT:

➤ **Focal Length of given Convex Lens = _____ cm.**

VIVA :-

1. What is a real image?
2. For what position of object, the image formed by a convex lens is virtual and magnified?
3. Give the application for each position of object listed above for a convex lens used in daily life?
4. Mention the size of the image formed for the each position of object listed above?
5. What are the different types of convex lenses available?
6. Explain why convex lens is called converging lens?