**EXPERIMENT 11**

**CONCAVE LENS**

**Day & Date:**

Aim: To determine the focal length of a concave lens using a convex lens.

Theory:

Focal length of the given convex lens can be calculated using

Focal length of a combination of lenses is given by

RAY DIAGRAM:

OBSERVATIONS:

1. **Convex Lens:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Position of | | | Object distance (u)  cm | Image distance (v)  Cm | Focal Length of the convex lens (f1)  cm |
| Object (O) | Lens(L) | Image (I) |
| 01 |  |  |  |  |  |  |
| 02 |  |  |  |  |  |  |
| 03 |  |  |  |  |  |  |
| 04 |  |  |  |  |  |  |
| 05 |  |  |  |  |  |  |

**Mean focal length of the convex lens (f1) = cm**

1. **Combination of Lenses:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Position of | | | Object distance (u)  cm | Image distance (v)  Cm | Focal Length of the combination (f)  cm |
| Object (O) | Lens(L) | Image (I) |
| 01 |  |  |  |  |  |  |
| 02 |  |  |  |  |  |  |
| 03 |  |  |  |  |  |  |
| 04 |  |  |  |  |  |  |
| 05 |  |  |  |  |  |  |

**Mean focal length of t h e combination (f2 ) = cm**

**Hence the focal length of the given concave lens is given by,**

**This gives f2 = …………..cm**

**Result:**

**Mean focal length of the given concave lens using a convex lens is**