

**Experiment Name:** To determine the refractive index of a prism using a spectrometer.

**Experimental Data:**

**Table1: Angle of minimum deviation ( $\theta_m$ )**

| Vernier Number | No. of Observation | Readings for minimum deviation position |                        |                                   |                      | Readings for Direct position |                        |                                   |                      | Angle of minimum dev<br>$\delta_m = M \sim N$ | Mean $\delta_m$ |
|----------------|--------------------|---|------------------------|-----------------------------------|----------------------|------------------------------|------------------------|-----------------------------------|----------------------|---|-----------------|
|                |                    | Main Scale readings (s)                 | Vernier scale division | Vernier scale reading v = vd x vc | Total<br>$M = S + V$ | Main Scale readings (s)      | Vernier scale division | Vernier scale reading v = vd x vc | Total<br>$N = S + V$ |   |                 |
| I.             | 1                  | 350                                     | 6                      | 0.1                               | 350.1                | 391                          | 8                      | 0.13                              | 391.13               | 41.03   | 41.20           |
|                | 2                  | 71                                      | 15                     | 0.25                              | 71.25                | 30                           | 10                     | 0.17                              | 30.17                | 41.08   |                 |
|                | 3                  | 354                                     | 4                      | 0.07                              | 354.07               | 398                          | 5                      | 0.08                              | 398.08               | 44.01   |                 |
| II.            | 1                  | 169                                     | 2                      | 0.033                             | 169.03               | 211                          | 10                     | 0.17                              | 211.17               | 42.14   |                 |
|                | 2                  | 249                                     | 10                     | 0.17                              | 249.17               | 209                          | 13                     | 0.22                              | 209.22               | 39.95   |                 |
|                | 3                  | 174                                     | 12                     | 0.2                               | 174.02               | 213                          | 2                      | 0.03                              | 213.03               | 39.01   |                 |