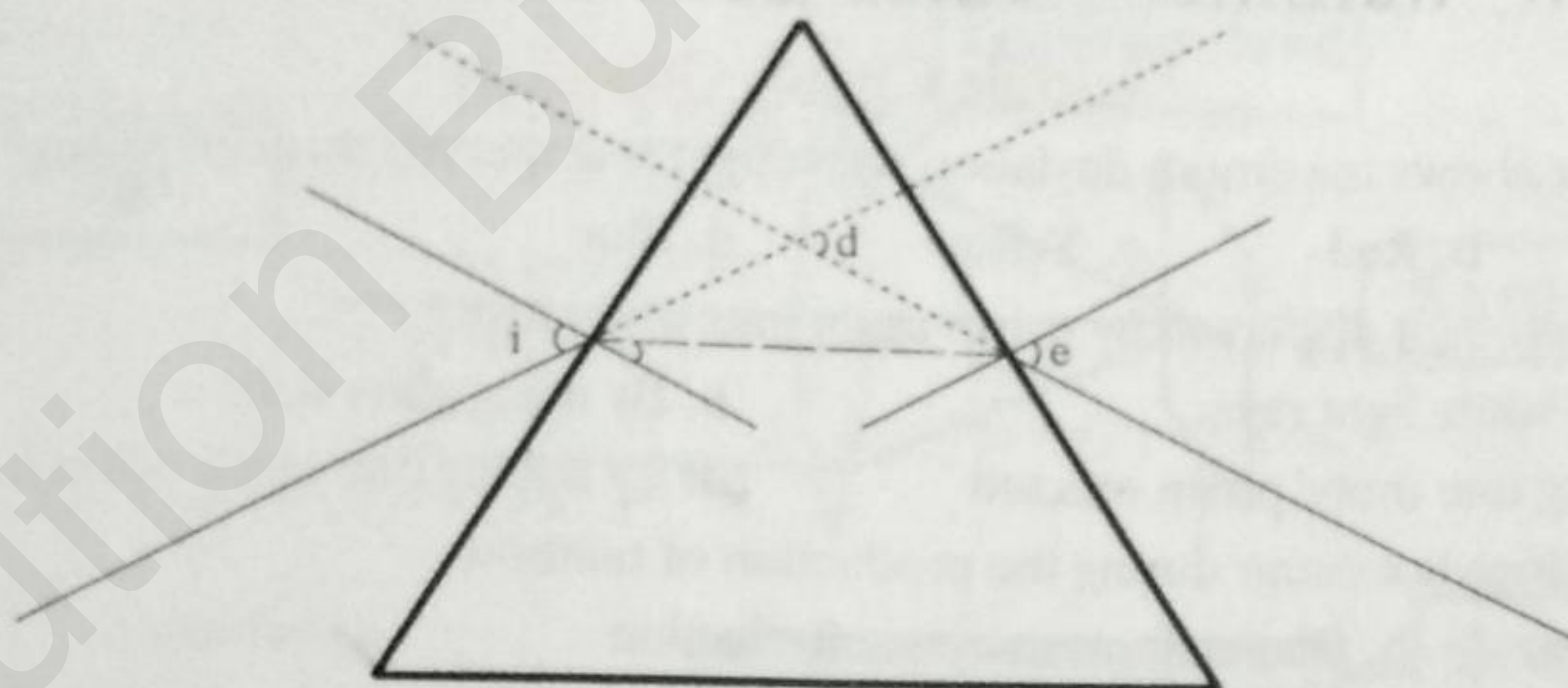


Practical No. 9

Aim : To trace the path of the rays of light through a glass prism and to find angle of deviation for different angles.

Apparatus : Prism, drawing board, a sheet of white paper, paper pins, drawing pins.

Figure : (Complete the diagram as per procedure.)



Procedure :

1. Take a sheet of white paper and fix it on the drawing board with the help of a drawing pins.
2. Place a glass prism along its triangular base at middle on the paper. Mark the boundary ABC of the glass prism.
3. Remove the prism and draw a normal LM through point Q on side AB.
4. Draw Ray PQ making an angle of 30° to the normal.
5. Fix two pins P_1 and P_2 on Ray PQ.
6. Place the glass prism back to its original position and look the images of pins P_1 and P_2 from the side AC.
7. Fix two more pins on P_3 and P_4 on this side such that pins P_3, P_4 and images of P_1, P_2 appear to be on a straight line.
8. Remove the prism and pins. Draw a line towards side AC through the points of pins P_3 and P_4 (S and R) which will intersect AC at point R.
9. Draw a normal on side AC through point R.
10. Extend Ray PQ and Ray SR on opposite side to intersect each other in point K.
11. Measure the angle of deviation d .
12. Repeat the procedure for angles of incidence 45° and 60° .

Observation

| Observation No. | angle of incidence (i) | angle of refraction (r) | angle of deviation (d) |
|-----------------|---------------------------|----------------------------|---------------------------|
| 1 | 30° | 43 | 48 |
| 2 | 45° | 37 | 38 |
| 3 | 60° | 40 | 40° |

Inference / Conclusion :

Initially, as the angle of incidence increases gradually, the angle of deviation decreases but after certain minimum value of incident angle, increases with the increase in the angle of incidence.

Initially as the angle of incidence increases gradually the angle of deviation decreases but after certain minimum value of incident

Multiple Choice Questions

1. Which colour shows maximum deviation when light is dispersed through prism?
a. Violet b. Red c. Yellow d. Blue
2. How to convert light dispersed by prism again into white light?
a. By using white light rays.
b. By using glass slab
c. By adding one more prism erected
d. By adding one more prism inverted.
3. does not occur during the production of rainbow.
a. Refraction b. Dispersion c. Reflection d. Induction
4. We could observe path of light due to of light from tiny particles of solution in transparent medium.
a. Scattering b. Dispersion c. Refraction d. Reflection
5. Dispersion of colour is minimum in visible range of light.
a. Red b. Blue c. Green d. Violet

: Exercise :

1. Which colour deviate minimum during the dispersion of light through a prism?

'Red' colour deviate minimum during the dispersion of light through a prism, because, The red light has maximum wavelength (around 700 nm) and also velocity of red light is greater as compared by other all colours, therefore, Red colour deviate minimum during dispersion of light.

2. If angle of incident increases angle of deviation decreases, but after a certain value of angle of incident, the angle of deviation increases. What is that specific value of angle of incident called? Does these angles same for light of all colour?

When you reduce the angle of incident beyond the minimum angle of incident. I don't think it is right to call it the minimum angle of incident is must be rightly called of incident is minimum elevation.

Remark and Signature

