

1: No, when a beam of light passes through a prism, there is no spectrum. A spectrum is produced by the deviation of different colors due to refraction of light. When a light passes through the hollow prism, it escapes out as it entered because no refraction takes place.

2: The band of colours obtained on a screen on passing white light through a prism is called spectrum. The amt of refraction depends on the speed of coloured light. Since different colours travel at different speeds they are refracted by different angles on passing through glass prism.

33 At min deviation $i^{\circ} = e^{\circ}$. So we can write,

$$i + e = A + \delta_m$$

$$\Rightarrow i^{\circ} = [A + \delta_m / 2] \text{ --- (eq 1)}$$

~~But~~ we know that the formula for putting A & the refractive index of prism is given by,

$$\mu = \frac{\sin \left[\frac{A + \delta_m}{2} \right]}{\sin [A/2]} \text{ --- (eq 2)}$$

(comparing eq 1) & (2)

$$\mu = \frac{\sin (i^{\circ})}{\sin [A/2]}$$

$$\Rightarrow \sin (i^{\circ}) = \mu \times \sin [A/2]$$

By substituting values,

$$\sin (i^{\circ}) = \sqrt{2} \times \sin [60/2]$$

$$\sin (i^{\circ}) = \sqrt{2} \times \sin 30$$

$$\Rightarrow i^{\circ} = \sin^{-1} [1/\sqrt{2}]$$

$$i^{\circ} = 45^{\circ}$$