

## ASSIGNMENT

- 1) Spectrum is produced by the deviation of different colours by the means of refraction. When the light (white) travels from air into the hollow prism, there's no change of medium, as a prism has air inside. Thus a beam of light does not give a spectrum on passing through a hollow prism. Speed of light outside the prism and inside the prism will be same as air is common medium inside and outside the hollow prism.

2) Spectrum is a band of white light formed of seven-different coloured light sequentially (VIBGYOR) from bottom to top. The speed of light rays ~~are~~ remain same in vacuum/air but ~~it~~ changes in different medium. Thus the glass prism ~~decomposes~~ splits the white light into different coloured-lights arrange in the certain sequence.

8)  $\mu_{\text{prism}} = \sqrt{2}$

$\angle A = 60^\circ$

$\angle D = ?$

$\angle C = \left( \frac{\angle A + \delta_m}{2} \right)$  {  $\delta_m \leftarrow$  minimum angle of deviation }

$\mu_p = \frac{\sin i}{\sin r}$

$\Rightarrow \mu_p = \frac{\sin \left( \frac{A + \delta_m}{2} \right)}{\sin \frac{A}{2}} (i)$

$\Rightarrow \sqrt{2} = \frac{\sin i}{\sin 30}$

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$$\Rightarrow \sin i = (\sqrt{2}) (\sin 30)$$

$$\Rightarrow \sin i = (\sqrt{2}) (1/2)$$

$$\Rightarrow \sin i = \frac{(\sqrt{2})^1}{(\sqrt{2})(\sqrt{2})}$$

$$\Rightarrow \sin i = (1/\sqrt{2})$$

$$\sin i = \sin 45$$

$$\therefore \angle i = 45$$

$\therefore$  Angle of Incidence is  $45^\circ$ .