



## SIR PRATEEK JAIN

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# **JEE MAINS**

## **Previous Years Questions**

**Dispersion**

**By Physicsaholics Team**

For Video Solution of this DPP, Click on below link

Video Solution  
on Website:-

<https://physicsaholics.com/home/courseDetails/73>

Video Solution  
on YouTube:-

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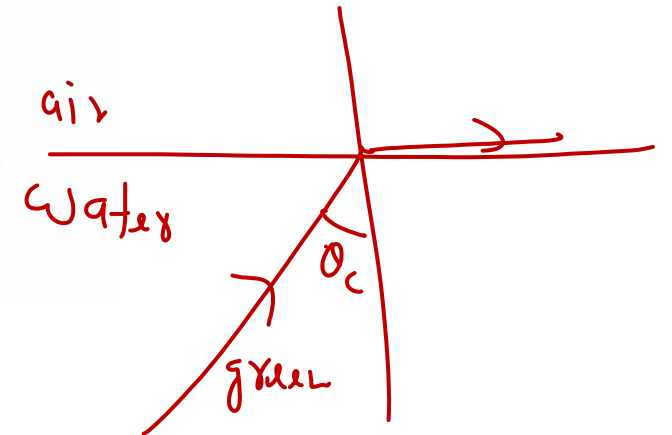
A green light is incident from the water to the air - water interface at the critical angle ( $\theta$ ). Select the correct statement.

**[JEE Main 2014]**

- (a) ~~The entire spectrum of visible light will come out of the water at an angle of  $90^\circ$  to the normal.~~
- (b) ✓ The spectrum of visible light whose frequency is less than that of green light will come out to the air medium.
- (c) ✗ The spectrum of visible light whose frequency is more than that of green light will come out to the air medium.
- (d) The entire spectrum of visible light will come out of the water at various angles to the normal.

$$i_c = \sin^{-1}\left(\frac{1}{\mu}\right)$$

**JEE Main**



$$\text{less } f_{\text{req}} \Rightarrow \text{high } \lambda \Rightarrow \text{low } \mu \Rightarrow \text{high } i_c$$

Ans. b

The refractive index of a glass is 1.520 for red light and 1.525 for blue light. Let  $D_1$  and  $D_2$  be angles of minimum deviation for red and blue light respectively in a prism of this glass.

Then,

[2006] **JEE Main**

- (a)  $D_1 < D_2$  ✓
- (b)  $D_1 = D_2$
- (c)  $D_1$  can be less than or greater than  $D_2$  depending upon the angle of prism
- (d)  $D_1 > D_2$

$$D = A(\mu - 1)$$

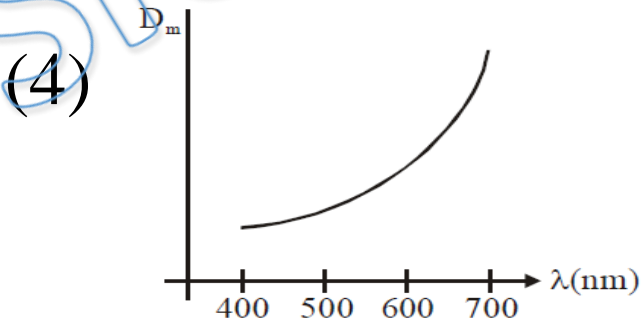
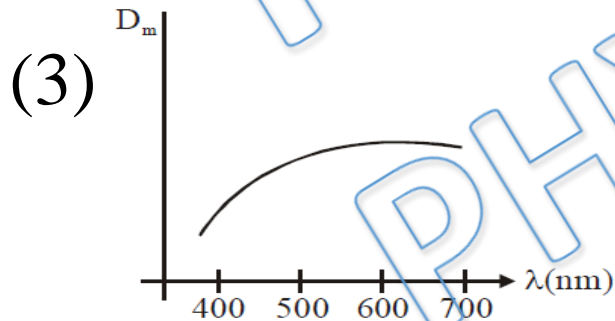
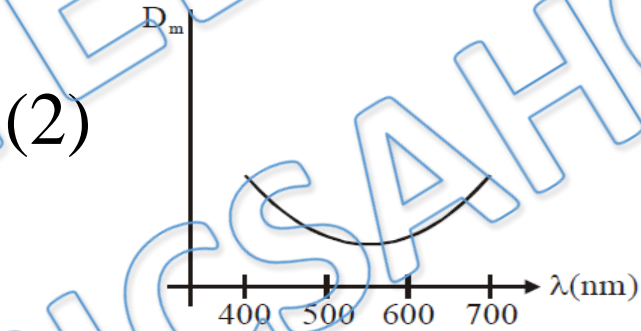
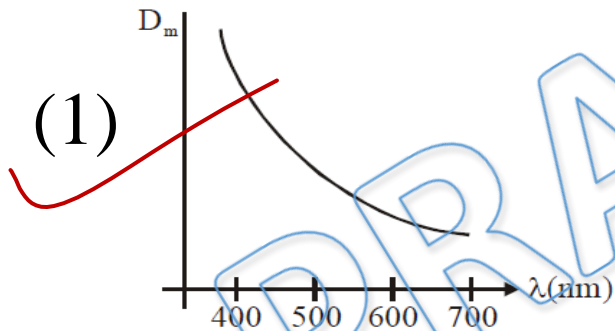
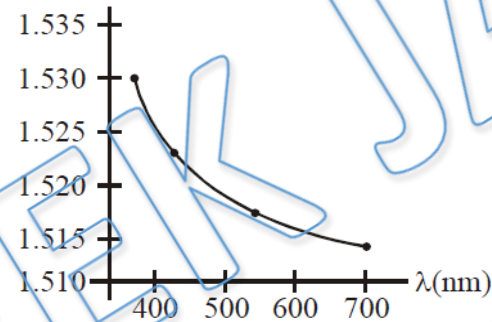


Ans. a

Q) The variation of refractive index of a crown glass thin prism with wavelength of the incident light is shown. Which of the following graphs is the correct one, if  $D_m$  is the angle of minimum deviation?

[JEE Main-2019]

$$\delta_m = A(\mu - 1)$$



Ans. 1

**PYQs on Following Subtopic:**

Longitudinal Chromatic  
Aberration

Q) When monochromatic red light is used instead of blue light in a convex lens, its focal length will :-

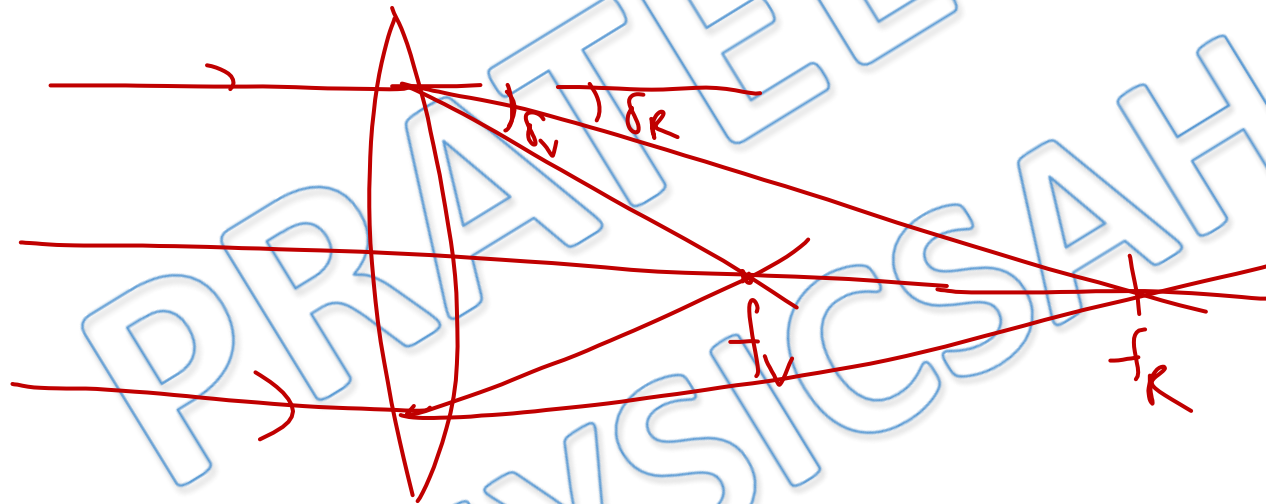
[AIEEE- 2011]

(1) Does not depend on colour of light

~~(2) Increase~~

(3) Decrease

(4) Remain same



Ans. 2

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Chalo Niklo