PART 1 - PHYSICS

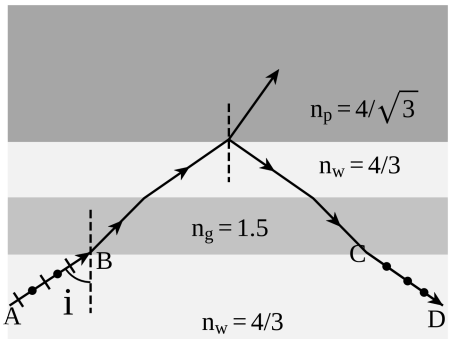
Topic : Wave optics

SECTION–1 : (Maximum Marks : 8)

- This section contains **TWO** questions.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value of the answer (in decimal notation, truncated / rounded-off to the **SECOND DECIMAL PLACE**; e.g. 6.25, 7.00, −0.33, −.30, 30.27, −127.30) in the place designated to enter the answer.
- Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 If ONLY the correct answer is entered;
Zero Marks : 0 In all other cases.

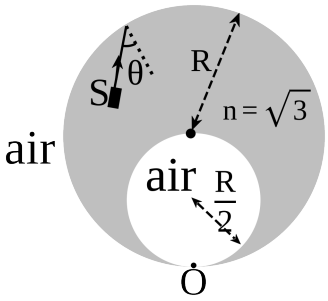
1. As shown in the figure, a ray AB of unpolarized light enters from water of refractive index $n_w = 4/3$ into a medium of refractive index $n_p = 4/\sqrt{3}$ after passing through a glass plate of refractive index $n_g = 1.5$ and a layer of water. At a particular incident angle i the reflected ray CD is polarized in the direction as shown in the figure. The value of i (in degrees) is: [JEE Advanced 2026 Paper 2]



Scan or tap for the full solution

2. A solid glass sphere of refractive index $n = \sqrt{3}$ and radius R contains a spherical air cavity of radius $\frac{R}{2}$, as shown in the figure. A very thin glass layer is present at the point O so that the air cavity (refractive index n = 1) remains inside the glass sphere. An unpolarized, unidirectional and monochromatic light source S emits a light ray from a point inside the glass sphere towards the periphery of the glass sphere. If the light is reflected from the point O and is fully polarized, then the angle of incidence at the inner surface of the glass sphere is θ. The value of $\sin\theta$ is ____ [JEE Advanced 2025 Paper 1]

Space for Rough Work



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JEE ADVANCED WAVE OPTICS — BREWSTER'S LAW, POLARISATION BY SCATTERING AND REFLECTION — PYQS

Test Pattern : **JEE (Advanced)**

ANSWER KEY

SECTION–1

Ques.	1	2																									
Ans.	**60**	**0.75**																									