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General Questions

Practice Questions

Q1. Which of the following phenomena is NOT explained by wave optics?

A. Interference
B. Diffraction
C. Polarization
D. Photoelectric effect

Solution: The photoelectric effect is explained by quantum mechanics and particle nature of light, not by wave optics.

Q2. What is the wavelength of light if the first-order maximum occurs at an angle of 30° in a double-slit experiment with slit separation of 0.1 mm and a screen distance of 1 m?

A. 300 nm
B. 600 nm
C. 450 nm
D. 750 nm

*Solution: Using $d \sin \theta = m\lambda$, $\lambda = d \sin \theta / m$. For $m=1$, $d=0.1$ mm, $\theta=30°$, $\lambda = 0.1$ mm * $\sin(30°) = 0.1$ mm * $0.5 = 0.05$ mm = 500 nm.*

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