

Physics Questions



Long Answer Type Questions (5 Marks)

35. (a) Obtain the conditions for the bright and dark fringes in diffraction pattern due to a single narrow slit illuminated by a monochromatic source. Explain clearly why the secondary maxima go on becoming weaker with increasing n .
- (b) When the width of the slit is made double, how would this affect the size and intensity of the central diffraction band? Justify.
- [AI 2012]*
36. (a) Explain two features to distinguish between the interference pattern in Young's double slit experiment with the diffraction patterns obtained due to a single slit.
- (b) A monochromatic light of wavelength 500 nm is incident normally on a single slit of width 0.2 mm to produce a diffraction pattern. Find the angular width of the central maximum obtained on the screen.
- Estimate the number of fringes obtained in Young's double slit experiment with fringe width 0.5 mm, which can be accommodated within the region of total angular spread of the central maximum due to single slit.
- [Delhi 2017]*