

Smt. Indira Gandhi College of Engg. Koper Khairane, Navi Mumbai
Sub. Applied Physics –II Time: - 01Hr. Marks: - 15

Q.1 Solve any three. (3 x 2 = 06)

1. Write a note on Anti- Reflection coating. [CO1]
2. Deduce the missing orders for double slit Fraunhofer diffraction spectra if the slit widths are 0.16 mm & they are 0.8mm apart. [CO1]
3. A optical fiber has core Refractive index is 1.45. The refractive index of cladding is 1.448. Calculate the critical angle & Acceptance angle. [CO3]
4. In the single slit Fraunhofer diffraction spectra, as order of diffraction spectra is increases intensity of diffraction spectra goes on decreases Explain. [CO1]
5. White light is fall normally on soap film of thickness 5×10^{-5} cm & of refractive index 1.33 which wavelength in the visible region will be reflected most strongly? [CO1]

Q.2 Solve any one. (1 x 4 = 04)

1. In the Newton's ring experiment, the diameter of dark fringes is proportional to square root of fringe number. [CO1]
2. What are Rayleigh's criteria of resolution? Write expression for the resolving power of a grating. [CO1]

Q.3 Solve any one. (1 x 5 = 05)

1. Obtain the condition for maxima & minima due to interference in a wedge shaped film observed in reflected light. Derive the expression for fringe width. [CO1]
2. Derive the expression of width of central maxima of diffraction spectra. The Visible spectrum ranges from 4000Å to 7000Å. Find the angular breadth of the first order visible spectrum produced by a plane grating having 6000 lines/cm when light is incident normally on the grating. [CO1]