Course Name:

Course Outcome

CO1- Understand phenomena of Interference, Diffraction, Variation of intensities in them, and their applications in daily life.

CO2- Discuss polarization of Light wave, double refraction, production and analysis of different polarized light waves and optical activity.

CO3- Understand fundamentals of Quantum mechanics, Schrodinger's wave equations to deal with physics problem.

CO4- Familiar with Maxwell equations and use them to study the Propagation of E-M waves in free space and conducting medium

CO5- Understand the principle and working of Lasers.

CO6- Familiar with mechanism of communication through Optical Fibre Cables and signal losses.

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Mid Term Examination, Odd Semester 2022-23

B. Tech. (Hons.) CS, I Year, I Semester

BPHS 1004 Engineering Physics

Time: 2 Hours **Maximum Marks: 15**

Section – A

Attempt All Questions 1 X 3 = 3 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Why excessively thin films seen by reflected light appear dark?	1	1	A	C
2	Mention the physical significances of a wave-function.	1	3	U	C
3	Explain how you will distinguish between circularly polarized light and unpolarized light.	1	2	An	C

Section – B

Attempt All Questions 2 X 3 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
4	Express why Interference pattern appears circular in Newton's ring experiment. Generally the center of Newton's ring interference pattern appears dark. Describe a method/process/arrangement by which it can be made bright?	2	1	U	F
5	In Fresnel's biprism experiment, the fringe width is found to be 0.196mm when observed at a distance 1.00m from the slit. When convex lens was placed at two places between biprism and eye-piece, the separation between images was found to be 6.00mm and 1.5mm. Calculate wavelength of light used.	2	1	A	C
6	Two polarizing sheets have their directions parallel so that the intensity of transmitted light is maximum. Through what angle must either sheet be turned so that the intensity becomes one half of initial value?	2	2	An	C

Section – C

Attempt All Questions 3 X 2 = 6 Marks

No.	Detail of Question	Marks	CO	BL	KL
7	For a single slit diffraction pattern, show that successive maxima bears the intensity ratio $\left(\frac{1}{3\pi}\right)^2 : \left(\frac{1}{5\pi}\right)^2 : \left(\frac{1}{7\pi}\right)^2$.	3	1	U	F
8	Deduce the de Broglie wavelength of relativistic particle having rest mass m_0 and kinetic energy K. Evaluate de Broglie wavelength associated with an electron of 1MeV.	3	3	E	P