

M.B.S College of Engineering And Technology Jammu

Department of APSH (2025 BATCH)

ASSIGNMENT -2

Semester:- Ist		Maximum Marks :- 100	
Subject : Advanced Engineering Physics		Subject Code :- BST-1103	
Branch :- CSE/IT		Date of Submission:- 06-11-2025	
Date of Issue:- 19-10-2025			
Q.No.	QUESTIONS		
1. (a)	Discuss the formation of Newtons Rings by reflected light. Describe the experimental arrangement and give necessary theory. Why are Newtons rings circular?	10	CO4
(b)	In a plane transmission grating the angle of diffraction from second order maxima is 30° . Calculate the number of lines in one centimetre of the grating surface, $\lambda=5 \times 10^{-5} \text{ cm}$.	10	
2. (a)	A wave function given below. Find the Normalized wave Function. $\Psi(x) = A \sin \frac{n\pi x}{L} \quad 0 < x < L$ $= 0 \quad \text{outside}$	10	CO3
(b)	Calculate the expectation value of position for the normalized wave function $\Psi(x) = \sqrt{\frac{2}{L}} \exp \exp(-ikx) \text{ in the interval } (0, \frac{L}{2})$.	10	
3.	What is Compton effects? Determine expression for Compton shift and Compton wavelength. Is the effect observable with visible light?	20	CO3
4. (a)	Explain the theory of Hall Effect and derive the expression for values of Hall Co-efficient.	10	CO2
(b)	Newton rings are observed in reflected light of wavelength $5.9 \times 10^{-7} \text{ m}$. The diameter of 10^{th} dark ring is 0.5 cm . Find the radius of curvature of the lens and thickness of the air film.	10	CO4
5.	State Schrodinger's wave equation for a particles in a 1- dim box with infinite hard walls. State the boundary conditions and solve it to obtained normalized wave function and values of energy for different states of the particles.	20	CO3