



Yash Madho Singh Bhandari Uttarakhand Technical University Campus Institute

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Sessional Exam - I
(Even Semester 2024-25)

[REDACTED]

Course Name & Code: Engineering Physics & AHT-001

Branch: CSE AIML/EE/ECE/CE/ME

Name/ Roll. No.:

Max. Time: 1.30 Hours

Semester: II

Max. Marks: 30

Course Outcomes (COs)

CO1: Apply properties and working of Optics for engineering applications.

CO2: Analyze the principle of physical optics in daily life applications.

CO3: Choose suitable material based on their electric and magnetic behavior of materials.

CO4: Comprehend the behavior of microscopic objects using fundamental of quantum mechanics.

CO5: Apply concepts of semiconductor physics for designing of various electronic devices.

Bloom's Taxonomy Levels (BTL)

Creating - 6

Evaluating - 5

Analyzing - 4

Applying - 3

Understanding - 2

Remembering - 1

Question No.	Details	CO(s) Covered	BTL(s)	Marks
1.	(i) If in an interference pattern, the ratio between maximum and minimum intensities is 36:1, find the ratio between the amplitude and intensities of the two interfering waves. (ii) What is Interference of light? Discuss the necessary conditions for Interference of light.	CO1	1, 2	2, 3
2.	Derive an expression for displacement of fringes. In Young's double-slit experiment, the angular width of a fringes formed on a distance screen is 0.10, the wavelength of light used is 6000Å. What is the spacing between the slits?	CO2	2	3, 2
3.	(i) Write short notes on Division of wavefront. Division of amplitude. (ii) In Newton's ring experiment the diameter of 4th and 12th dark rings are 0.400cm and 0.700cm respectively. Deduce the diameter of 20th dark ring.	CO1	1, 2	2, 3
4.	(i) Write three differences between Interference of light and diffraction of light. (ii) Explain the formation (not derivation) of spectra by a plane diffraction grating. What are its chief characteristics?	CO1	2	3, 2
5.	Describe and explain the formation of Newton's ring in reflected monochromatic light. Explain briefly why Newton's rings are circular.	CO1	1	10