JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

B.Tech-I Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 25B11PH111(3) MAX. MARKS: 25

COURSE NAME: Physics-I

COURSE INSTRUCTORS: PBB MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems and use of Calculator is allowed.

		CO	Marks
Q1	How will you determine the refractive index of an unknown liquid using Newton ring experiment?	2	3
Q2	A biprism is placed 5 cm away from a slit illuminated by sodium light (λ =5890 Å). The width of the fringes obtained on a screen placed at a distance of 75 cm from the biprism is 9.424×10^{-2} cm. What is the distance between the two coherent sources?	1	3
Q3	Two coherent sources whose intensity ratio is 100:1 produce interference fringes. Find the ratio of maximum intensity to minimum intensity in the interference pattern.	3	3
Q4	Two coherent sources of monochromatic light of wavelength 6000 Å produce an interference pattern on a screen kept at a distance of 1 m from them. The distance between two consecutive bright fringes on the screen is 0.5 mm. Find the distance between the two coherent sources.	4	3
Q5	Draw the intensity pattern for double slit diffraction.	2	3
Q6	How many orders will be visible if the wavelength of the incident light is 5000 Å and the number of lines per inch on the grating is 2620?	3	3
Q7	Derive the resolving power of telescope.	1	3
Q8	How circular polarised light can be produced and detected? Explain with proper diagram.	1	4