

Jashore University of Science and Technology

Bachelor of Science Electrical and Electronic Engineering

1st semester of 1st year, Session: 2024 – 2025

Course no.: 053311 PHY 1101

Course title: Physics

Assignment no.: 01

Date: 04 November 2025

Deadline for submission: 20 November 2025, 12:30 PM

- 1.** What is interference of light? Under what conditions interference of light take place?

- 2.** In case of Young's double slit experiment, show that $I = 4I_0 \cos^2 \frac{\delta}{2}$, where the symbols carry usual meaning.

- 3.** Define diffraction of light. What is Fresnel and Fraunhofer class of diffraction?

- 4.** For single slit diffraction show that $I = I_0 \left(\frac{\sin \beta}{\beta} \right)^2$, where the symbols carry usual meaning.

- 5.** What are the thermodynamic functions? Find the differential equations of the thermodynamic functions.

- 6.** Write down important features of the Carnot cycle. Prove that the efficiency of a Carnot cycle is temperature dependent.