Jashore University of Science and Technology
Bachelor of Science Electrical and Electronic Engineering
1st semester of 1st year, 2025

Course no.: 053311 PHY 1101   Course title: Physics
Class test no.: 01   Date: 08 September 2025

Roll:

1. Write down the postulates of the special theory of relativity. [4]

2. Why does the photoelectric effect not occur if the frequency of incident light is below a certain threshold, regardless of its intensity? [5]

3. A meter stick moving with respect to an observer appears only 500 mm long to her. What is its relative speed? [5]

4. A photon of green light has a wavelength of 520 nm. Find the photon's frequency, magnitude of momentum, and energy. [6]

5. The work function of a metal surface is 2.3 eV. Ultraviolet light of wavelength 400 nm falls on the surface. (a) Will photoelectrons be emitted? (b) If yes, calculate the maximum kinetic energy of the emitted electrons in eV. [5]

6. A beam of x rays with wavelength 0.0500 nm is Compton scattered by the electrons in a sample. At what angle from the incident beam should you look to find x rays with a wavelength of 0.0542 nm? [5]