

Jashore University of Science and Technology

Bachelor of Science in Textile Engineering

1st semester of 1st year, 2025

Course no.: 053322 PHY 1125

Class test no.: 01

Course title: Physics – I

Date: 25 October 2025

Roll:

- 1.** State Hooke's law and explain its significance in understanding elastic behavior. [5]

- 2.** Define Poisson's ratio. What is its significance and typical range for common materials? [5]

- 3.** A steel wire of original length 2 m and diameter 1 mm is stretched by a load of 2 N. Find the extension. (Take $Y = 2 \times 10^{11}$ N/m²) [5]

- 4.** What is meant by the rate of flow of a fluid? Distinguish between streamline and turbulent flow. [5]

- 5.** State and explain Bernoulli's theorem. Write down the mathematical form of Bernoulli's equation. [5]

- 6.** Water flows through a horizontal pipe of varying cross-section. The pressure at a point where the velocity is 2 m/s is 1.5×10^5 Pa. Find the pressure where the velocity is 3 m/s. (Density of water = 1000 kg/m³) [5]