

Question Paper

Topic 1: Mechanics

Q1. What is the difference between speed and velocity in the context of mechanics?

Answer: Speed is a scalar quantity representing the rate of motion, while velocity is a vector quantity representing the rate of motion in a specific direction.

Explanation: Speed is the magnitude of velocity and does not have direction, while velocity includes both magnitude and direction.

Q2. Explain the concept of inertia in mechanics.

Answer: Inertia is the tendency of an object to resist changes in its state of motion. An object at rest will remain at rest, and an object in motion will continue moving at a constant velocity unless acted upon by an external force.

Explanation: Inertia is a fundamental property of matter and is related to mass - the greater the mass of an object, the greater its inertia.