

Question Paper

Topic 1: Mechanics

Q1. How does the mass of an object affect its acceleration when a constant force is applied to it?

Acceleration increases with mass

Acceleration decreases with mass

Acceleration remains the same regardless of mass

Acceleration is inversely proportional to mass

Answer: Acceleration decreases with mass

Explanation: According to Newton's second law, acceleration is inversely proportional to mass when a constant force is applied.

Q2. Explain the difference between speed and velocity in terms of magnitude and direction.

Answer: Speed is the magnitude of an object's motion, while velocity includes both magnitude and direction.

Explanation: Speed is a scalar quantity that only considers magnitude, while velocity is a vector quantity that includes both magnitude and direction.