Question Paper

Topic 1: Mechanics

Q1. Explain the concept of acceleration in physics. How is it different from velocity?
Answer:
Explanation: Acceleration is the rate of change of velocity with respect to time. It is a vector quantity, unlike velocity which is a scalar quantity. Acceleration can be in the same direction as velocity, opposite direction, or perpendicular.

Q2. Describe the principle of conservation of momentum in the context of collisions. How does it apply to both elastic and inelastic collisions?
Answer:
Explanation: The principle of conservation of momentum states that the total momentum of a system of objects remains constant if no external forces are acting on it. In elastic collisions, both momentum and kinetic energy are conserved. In inelastic collisions, momentum is conserved but kinetic energy is not.