

Physics - ICS Part 1 Physics Chapter 3 Short Questions Test

Q1. Define the following terms?

Position,
Uniforms
speed,
variable speed
average speed,
Instantaneous speed,

Ans 1: Position: The location of an object relative to some reference point origin is known as position.

Speed: The distance between covered by a moving body in one second is known as speed

Speed = Distance covered / Time

The speed is a scalar quantity. Its S.I unit is " m/sec" .

Uniform Speed: A body is said to be moving with uniform speed, if it equal distance in equal intervals of time.

Variable Speed: A body is said to be moving with variable speed if it covers unequal distance in equal intervals of time.

Average Speed: The average speed of a moving body can be attained by dividing total distance covered by total time taken

Instantaneous Speed: The speed of a body at any particular instant of time is known as instantaneous speed.

Q2. Discuss the sign of acceleration due to gravity relative to velocity, while the object is in air?

Ans 1: When the object is thrown vertically upward, it will move against the direction of gravity. The sign of acceleration due to gravity relative to velocity will be taken as negative. When the object is falling downward, it will move along the direction of gravity. The sign of acceleration due to gravity relative to velocity will be taken as positive.

Q3. What is meant by perfectly elastic head-on-collision? Discuss the elastic collision in one dimension and find the mathematical equation for calculating the final velocities of colliding objects in one dimension?

Ans 1: Perfectly elastic head-on-collision: The collision in which the motion of the objects occurs along a straight line is known as perfect elastic head-on-collision. Determination of mathematical equations for calculating the final velocities of colliding objects in one dimension:

Q4. What is projectile motion? In what direction acceleration is zero in this motion?

Ans 1: It is the two dimensional motion in which the object moves under constant acceleration due to gravity. The acceleration in horizontal direction is zero in projectile motion.

Q5. Distinguish between elastic and inelastic collision.

Ans 1: In case of elastic collision the K.E of the system is conserved while in case of inelastic collision the K.E is not conserved. But the total linear momentum and the total energy of the system remains constant in both types of collision.

Q6. What is the change in total energy during elastic or inelastic collisions?

Ans 1: The total energy of the system remains conserved during both type of collisions. But in an inelastic collision, some of the kinetic energy is lost .

Q7. What is isolated system ? State and explain the law conservation of linear momentum. with an example ?

Ans 1: Isolated System: A system which is not affected by external forces is known as an isolated system.

Law of conservation of linear Momentum:

Statement: This law states that, In the absence of external forces the total linear momentum of the system remains constant.

Example: Consider two bodies of masses ' m_1 , and m_2 ' which are moving in the same direction along the same line, as shown in the figure

Q8. Define rest and motion ?

Ans 1: Rest: A body is said to be at rest if it do not change its position with respect to the surrounding.

Motion: A body is said to be in motion if it change its position with respect to the surrounding.

Q9. Why Newton's first law of motion is known as law of inertia?

Ans 1: Newton's first law of motion is:

A body at rest will remain at rest and a body moving with uniform velocity will continue to do so unless acted upon by some unbalanced external force.

It is based on mass and inertia is the quantitative measure of an object's mass. So Newton's first law of motion is also Known as law of inertia.

Q10. State law of inertia?

Ans 1: Newton's 1st law of motion is called law of inertia

It states that a body at rest will remain at rest , and a body moving with uniform velocity will continue to do so, unless acted upon by some unbalanced external force.
