Physics - FSC Part 1 Physics Chapter 3 Short Questions Preparation

Q1. Discuss the displacement-time Graph?

Ans 1:

Q2. Define Distance and displacement ?

Ans 1: **Distance:** The length of actual path traversed by a body in motion is known as distance. The actual path may be straight or cured. The distance is a scalar quantity. Its S.I units is meter.
Displacement: The shortest distance between is know as displacement.
A body reaches from point 'O' to 'C' through 'A" and 'B'. Thus the path 'OABC' represents the actual path traversed by the body during its motion. So it is called distance. While 'oc' represents the shortest distance between the initial point 'o' and final point 'c' It S.I unit is meter

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Q3. Can the velocity of an object reverse the direction when acceleration is constant? If so, given an example.

Ans 1: Yes, the velocity of a body can reverse its direction with constant acceleration For example, when a body is thrown vertically upward under the action of gravity, the velocity of the object will go on decreasing because force of gravity is acting downward. When the object reaches the maximum height , its velocity becomes zero, and then the object reverses its direction of motion and start moving vertically downward.During the whole process, the magnitude of the acceleration due to gravity remains constant.

Q4. An object is thrown vertically upward.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 moving downward, the sign of acceleration due to gravity will be positive.

Q5. 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.

Q6. Define elastic and inelastic collisions.

Ans 1: Elastic collisions: A collision in which the K.E. Of the system is conserved is called elastic collision.
Inelastic collisions: A collision in which the K.E.of the system is not conserved is called inelastic collision.

Q7. Under what condition, the instantaneous and average velocities of a moving object become equal?

Ans 1: For a body moving with uniform velocity, its average and instantaneous velocities are equal.

Q8. Why a safety helmet of a motor cycle's is padded?

Ans 1: A motor cycle's safety helmet is padded so as to extend the time of collision to prevent serious injury.

Q9. Define momentum and write down its unit.

Ans 1:

Q10. Define Force? Define its SI unit ?

Ans 1: A Force is an agent which stops a moving body try to stop a moving body (or) which moves a stationary body (or) try to move stationary The Product of mass and accelerations known as force
F = ma
Unit of force:
F= ma = kg m/sec^{2}So the unit of force is Newton, Which is define as,
Force is said to be 1 newton ,if it moves a body of mass 1 kg with acceleration of 1m/sec^2,

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