Physics - FSC Part 1 Physics Chapter 3 Short Questions Preparation

Q1. What is Ballistic Flight and Ballistic Missile?

Ans 1: The flight in which projects is given an initial and is then allowed to move freely due to inertia and under the action of gravity is called ballistic flight.
Ballistic missile is an unpowered and unguided missile.The flight of Ballistic missile is Ballistic flight.

Q2. 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 .

Q3. 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.

Q4. Find a relation for magnitude of velocity of projectile and direction of projectile?

Ans 1:

Q5. Define free fall motion? Also define the acceleration due to gravity ?

Ans 1: If we drop an object from certain height height 'h' and ignore the air resistance then such motion of the body is known as free fall motion. the acceleration of free fall body is known as acceleration due to gravity.
It is represented by 'g' Its value varies with altitude and depth. On earth surface or near earth surface its value is 9.8 m/sec^2

Q6. What is ballistic missile? Define ballistic trajectory.

Ans 1: The missile in which it is given an initial push and is then allowed to move freely due to inertia and under the action of gravity is called ballistic and the path followed by such a projectile is called ballistic trajectory.

Q7. Write two object?

Ans 1: Velocity time graph can be used to

1. Calculate the distance covered by the body .
2. Find the instantaneous acceleration of the body.

Q8. Define Impulse ? Show that impulse is equal to change in momentum show that J= P

Ans 1: **Impulse:** The product of forces and duration of time in which the force acts is known as impulse.

Q9. Define Collision ? Discuss the type of collision?Give example in each case?

Ans 1: **Collision:**When two or more than two bodies come so closer to each other that there exists some type of interaction between them in the presence or absence of external forces then such type of interaction is known as collision.
Type of Collision: There are two type of collision, which are given below.
Elastic Collision: The Collision in which the momentum and kinetic energy both are conserved is known as elastic collision.
Examples:

1. collision of steel balls,
2. Collision of atoms,
3. Collision of molecules.

Inelastic Collision: The Collision in which the momentum is conserved but K.E is not conserved, is known as Inelastic collision. "
In such type of collision, same type of the K.E is converted into internal energy, sound energy and the work needed to permanently deform the object involed, such as cars ina car crash.
Example:

1. Collision between two vehicles
2. Collision between two mud balls

Q10. Define the following terms?
Acceleration
Uniform Acceleration
Variable Acceleration
Radical Acceleration
Linear Acceleration
Positive Acceleration
Negative Acceleration
Instantaneous Acceleration

Ans 1: **Acceleration:**The rate of change of velocity is known as acceleration.
Mathematically, we have

Acceleration = v/t It is a vector quantity. It SI unit m/sec^2
Dimensions of acceleration: We know that
V= Displacement / time = m/sec= Length / Time

$V=[L\ T^{-1}]$
Dimensions of acceleration: We Known that

a = Velocity/time = m/sec . sec = m/sec^{-2}

a = Length/time^2 a = $[L\ T^{-2}]$
Uniform Acceleration:A body is said to be moving with the uniform acceleration if equal change occurs in velocity in equal intervals of time.
Variable Acceleration:A body is said to be moving with variable Acceleration if unequal change occurs in velocity in equal intervals intervals of time.
Linear Acceleration: The acceleration which is produced due to change in magnitude of velocity is known as linear acceleration.
Radical Acceleration: The acceleration which is produced due to change indirection of velocity is known as radical acceleration.
Positive Acceleration: The acceleration is said to be positive if the magnitude of velocity increases with respect to time.
Negative Acceleration: The acceleration will be magnitude of velocity decreases with respect to time.
InstantaneousAcceleration: The acceleration of a body at any particular instant of time is known as instantaneous acceleration.