

NEWTON'S LAWS OF MOTION.NEWTON'S FIRST LAW OF MOTION - LAW OF INERTIA.

According to this law, a body continues to be in its state of rest or of uniform motion along a straight line, unless it is acted upon by an external force.

Inertia It is the inability of a body to change the state of rest or of uniform motion by itself. Inertia is a measure of mass.

The three types of inertia are,

1. inertia of rest.
2. inertia of motion.
3. inertia of direction.

Examples - A passenger standing in a stationary bus falls backwards when the driver starts the bus suddenly.

- An athlete cannot stop running as soon as reaching the finishing point.

- It is dangerous to jump out of a running bus.

physical meaning - On a frictionless surface if an object is moving with a constant velocity, no force is acting on it.

NEWTON'S SECOND LAW OF MOTION.

According to this law, the rate of change of momentum of a body is directly proportional to the external force applied on the body and it takes place in the direction of applied force.

Momentum (\vec{p})

It is the product of mass and velocity. $P = mv$. Vector. S.I. unit is kgms^{-1} .

