

## Assignment - 1

1) An object experiences a net external unbalanced force. Is it possible for the object to be travelling with a ~~non-zero~~ non-zero velocity? If yes, state the conditions that must be placed on ~~the~~ the magnitude and direction of the velocity. If no, provide a reason.

Ans According to Newton's third law of ~~the~~ Motion, no external force is needed now an object ~~travels~~ travels with a constant velocity. So, an object travels with a constant velocity when it experiences a net zero external unbalanced ~~force~~ force. The magnitude of this velocity is constant and the direction is same as in the beginning. An object may also not move at all if it experiences a net ~~zero~~ zero external unbalanced force. This is because, the object may be at rest in the beginning.

2) Differentiate balanced and unbalanced force.

Ans Balanced force: If two individual forces are of equal magnitude and ~~of~~ opposite direction, then the ~~two~~ forces are said to be balanced. Balanced force means the sum of all the forces acting on a body is zero. Balanced force ~~do~~ doesn't affect the state of motion of object.

Unbalanced force - An object is said to be ~~acted on to be~~ balanced. An object is said to be acted upon by an unbalanced force only when there is an individual force that is not being balanced by a force of equal magnitude and ~~into~~ the opposite ~~in~~ direction. Unbalanced force means the sum of all the forces acting on a body is ~~not zero~~. Unbalanced force changes the state of motion.

③ Define inertia.

The tendency of the body to oppose the ~~change~~ change in its states of rest or uniform ~~in~~ motion in a straight line is called inertia.

④ Write whose inertia is more: A bicycle and a train.  
A five rupee coin and one rupee coin.

Ans (i) The mass of the train is <sup>more</sup> ~~greater~~ than ~~that~~ of bicycle, thus the inertia of the ~~to~~ train is greater than that of the bicycle.

(ii) Mass of a five rupee coin is more than that of a one-rupee coin. Hence, the inertia of the five rupee coin is greater than that of the one-rupee coin.