

## Home Assignment

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

Q.2. Differentiate :- balanced & unbalanced force.

### Answer

Q.1. Yes, an object may travel with a non-zero velocity even when the external ~~unbalanced~~ force on it is zero. Once an object comes into motion & there is a condition in which is imposed by any external force; the object will continue to remain in motion. It is necessary that the object moves at a constant velocity & in a particular direction.

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### Balanced Force

- ⇒ If the resultant of all the forces acting on a body is zero, the force is called Balanced Force.
- ⇒ Equal in magnitude.
- ⇒ Opposite in direction.
- ⇒ It does not cause any change in the state of motion of the object.

### Unbalanced Force

- ⇒ If the resultant of applied forces are greater than zero, the forces are called Unbalanced Force.
- ⇒ Unequal in magnitude.
- ⇒ Can be in any direction but opposite.
- ⇒ Causes change in the state of motion of the object.