

7/7/21 HOME ASSIGNMENT

(Q) 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 and direction of the velocity. If no, provide a reason. Differentiate balanced and unbalanced force.

Ans) A net zero external unbalanced force, means that object has balanced force.
In balanced force,

* Stationary object remains stationary

* Moving object remains moving.

Therefore,

Yes, it is possible for the object to travel with a non-zero velocity.

It is possible only if the object's velocity remains constant - i.e.

* Magnitude of velocity doesn't change.

* Direction of object doesn't change.

→ Differentiation balanced and unbalanced force :-

Balanced forces

Unbalanced forces

- Equal in magnitude
- Opposite in direction
- Does not cause any change in the state of motion of the object

- Unequal in magnitude
- can be in any direction but opposite
- causes change in the state of motion of the object