

02.07.21

Ch-9

# Force and Laws of Motion.

## Home Assignment

1. Which of the following has more inertia :-
  - (a) a rubber ball and a stone of the same size?
  - (b) a bicycle and a train?
  - (c) a five rupees coin and one-rupee coin?
2. Explain why some of the leaves may get detached from a tree if we vigorously shake its branch.
3. Why do you fall in the forward direction when a moving bus brakes to a stop and fall backwards when it accelerates from rest?

## Answers

1. (a) The mass of a stone is more than the mass of a rubber ball for the same size. Hence, the inertia of the stone is greater than that of a rubber ball.

(b) A body of larger mass has more inertia. Hence a train has more inertia than a bicycle.

(c) A body with a greater mass has more inertia. Hence a five-rupee coin has more inertia than a one-rupee coin.

Ans → When the tree is at rest, its leaves are also at rest. But when we bring the tree in motion by means of shaking it, due to the inertia of leaves they still tend to be in rest. Thus, force is acting on leaves vigorously with changing direction rapidly. This results in detaching of leaves from the tree.

Ans → When a moving bus brakes to a stop, our feet come to rest with the bus. But upper part of our body continues to move forward on account of inertia of motion. That is why we tend to fall in the forward direction.