

VIDYA BHAVAN, BALIKA VIDYAPEETH
SHAKTI UTTAN ASHRAM, LAKHISARAI, PIN:-811311

SUBJECT:- PHYSICS

CLASS:- IXTH

DATE:-21/04/XXI

SUBJECT TEACHER:- MR. NEEL NIRANJAN

CHAPTER 1. (MOTION)(BASED ON NCERT PATTERN)

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 a one-rupee coin?

Ans. (a) A stone of the same size

- (b) a train
- (c) a five-rupees coin

As the mass of an object is a measure of its inertia, objects with more mass have more inertia.

2. Explain why some of the leaves may get detached from a tree if we vigorously shake its branch.

Ans. When the tree's branch is shaken vigorously the branch attains motion but the leaves stay at rest.

Due to the inertia of rest, the leaves tend to remain in their position and hence detach from the tree to fall down.

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?

Ans. When a moving bus brakes to a stop: When the bus is moving, our body is also in motion, but due to sudden brakes, the lower part of our body comes to rest as soon as the bus stops. But the upper part of our body continues to be in motion and hence we fall in forward direction due to inertia of motion.

4. If action is always equal to the reaction, explain how a horse can pull a cart?

Ans. The third law of motion states that action is always equal to the reaction but they act on two different bodies.

In this case the horse exerts a force on the ground with its feet while walking, the ground exerts an equal and opposite force on the feet of the horse, which enables the horse to move forward and the cart is pulled by the horse.