MOTION

TERM USED TO DEFINE MOTION

Motion:

When the position of a body continuously changes with respect to time and its surroundings, the body is said to be in motion. In other words, when the position of a body continuously changes with respect to the reference point (any object around the body) and time, the body is said to be in a state of motion.

Rest and Motion as Relative Terms :

Apparently rest and motion are the terms which are opposite to each other. However, sometimes it becomes very difficult to say whether a body is in the state of rest or state of motion. Consider a person sitting in a speeding train. If the person compares himself with respect to fellow passengers and the interiors of the rain, he finds that his position does not change with respect to his immediate surroundings and hence, he is in the state of rest.

However, if the person compares himself with respect to the trees, fields, etc., outside the train, he finds that his position rapidly changes with respect to the outside surroundings and hence, he is in the state of motion.

As a matter of fact, if the immediate surroundings are limited (small), then a body may be in the state of rest. However, if the surroundings are enlarged, the body may be in the state of motion. It is for the same reason that we find ourselves in the state of rest on the planet Earth with respect to its immediate surroundings. However, we are in the state of motion, if we compare ourselves with respect to the Moon, the Sun or the Stars.

1

CLASS 9

Characteristics of a Moving Body:

1. There must be a reference point (stationary object) to describe the position of the given body.

2. The position of the given body must continuously change with time and with respect to the reference point.

Types of Motion:

In our everyday life, we come across various types of motion, like the motion of the sun, the motion of wind etc.

Motion can be classified into :

- 1. Random motion
- 2. Translational motion
- 3. Rotational motion
- 4. Oscillatory or vibratory motion