

## SELF ASSESSMENT QUESTIONS

### Q 1. Define Kinematics.

Ans

**Kinematics** is the branch of mechanics that deals with the **motion of objects** without considering the **causes of motion** (such as forces).

### Q 2. When is a body said to be in state of rest?

Ans When a body does not change its position with respect to time and its surroundings, the body is said to be at rest.

For example, if a chair is placed in the middle of a room, then the walls of the room are its surroundings. If the position of the chair (i.e., its distance from the walls) does not change with respect to the walls as well as time, then the chair is at rest.



### Q 3. How are rest and motion related to each other?

A body may be at rest relative to one object and at the same time it may be in motion relative to another object. For example, a passenger sitting in a moving bus is at rest with respect to his fellow passenger but he is in motion with respect to a man standing outside the bus.

### Q 4 Define Translatory Motion?

Ans:

When all points of a moving body move uniformly along the same straight line, such motion is called translatory motion

### Q 5. What is vibratory motion?

Ans

The change of position of a body around a mean position in one axis is called vibratory motion or oscillatory motion.

**Q 6. Differentiate between translatory motion, rotatory motion and vibratory motion.**

Ans

<b>TRANSLATORY MOTION</b>	<b>ROTATORY MOTION</b>	<b>VIBRATORY MOTION</b>
A body moves along a straight line.	The spinning of a body about its axis.	The body moves back and forth about mean position.
Movement of an object from one place to another.	The motion of an object about fixed point.	The body moves up and down.
All particles of the rigid body move with the same velocity at every instant of time.	The motion of a rigid body about a fixed axis. Every particle of the body move in a circular path	An object repeat its motion itself.

**Q 7 Define Speed.**

Ans

Speed is defined as the rate of change in distance. In other words, speed is the distance moved per unit of time. It tells us how fast or slow an object is moving.

**Q 8. What is velocity?**

Ans

**The distance covered by a body in a particular direction per unit time.**

**Or**

**The rate of change of displacement.**

**Q 9. Define acceleration.**

Ans

**Acceleration** is the rate of change of **velocity** with respect to time.