

CLASS – IX
PHYSICAL SCIENCE

1. A body moving with uniform velocity has a uniform speed , but a body moving with uniform speed may not have uniform velocity. Explain.

Ans. Velocity is given by $\vec{V} = v\hat{n}$ where \vec{V} represents velocity, v represents speed and \hat{n} represents a unit vector along the tangent to the path in which the particle moves. This means that the magnitude of velocity represents speed but velocity has a certain direction also. Even when a particle moves along a circular path with a uniform speed , its velocity changes every moment because the tangent to the path changes its direction during the motion..

2. In which frame of reference are Newton’s Laws of motion applicable ?

Ans. Newton’s laws of motion are applicable in an inertial frame of reference .

3. What is simple harmonic motion ?

Ans. Any motion is said to be simple harmonic if it follows the four conditions stated below :

- i) motion must be in a straight line.
- ii) motion must be periodic.
- iii) acceleration of the particle executing the motion must be proportional to displacement.
- iv) acceleration must always be directed towards a fixed point.