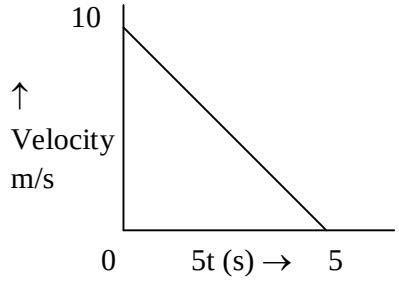
Class : IX Subject: Physics Assignment 8 Chapter: Motion

1. What is meant by the statement 'Rest and motion are relative terms'? Give example to show it.
2. Explain whether the walls of a classroom are at rest or in motion.
3. Define scalar and vector quantities.
4. Identify the following as scalar or vector quantities:- mass, velocity, speed, length, distance, displacement, temperature, force, weight, power, work and energy.
5. The school of a boy from his home is 1 km to the east. When he reaches back home, he says that he had traveled 2 km distance but his displacement is zero. Justify your answer.
6. Under what condition, the average speed is equal to the magnitude of the average velocity.
7. Can the average speed of a moving body be zero?
8. Can the average velocity of a moving body be zero? State eamples.
9. A car covers a distance of 5 km in 20 mins. Find the velocity of the car in (a) km/min (b) m/s (c) m/min (d) km/hr.
10. a train is moving with a velocity of 45km/hr. calculate the distance traveled by it in 1 hr, 1 min, 1 second.
11. An object P is moving with a constant velocity for 5 mins. Another object Q is moving with changing velocity for 5 mins. Out of these two objects, which one has acceleration? Explain.
12. Can an object be accelerated if it is moving with constant speed? If yes, explain giving examples.
13. (i) When do you say that an object has positive acceleration?
    (ii) When do you say that an object has negative acceleration?
14. State which of the following situations are possible and give an example of each of these:-
    (a) a body moving with constant acceleration but with zero velocity.
    (b) A body moving horizontally with acceleration in vertical direction.
    (c) A body moving with a constant speed in an accelerated motion.
15. What is a reference point?
16. Name the 2 physical quantities which can be obtained from velocity-time graph.
17. An electric train is moving with a velocity of 120km/hr. how much distance will it cover in 30 sec?
18. Give differences between linear motion and circular motion.
19. Velocity time graph of a body is shown in the figure. What are initial and final velocities of the body?



20. A body moves around the sun with constant speed in circular path. Is the motion of the body uniform or accelerated?
21. Name the physical quantity which remains constant during uniform circular motion.
22. Name the physical quantity which changes during uniform circular motion.

23. An object has moved through a distance. Can it have zero displacement? Support your answer with an example.
24. A physical quantity is measured – 10m/s. is it speed or velocity?
25. A car is moving with a uniform velocity of 10m/s. the driver of the car decides to overtake the bus moving ahead of the car. So the driver of the car accelerates at $1m/s^2$ for 10 sec. Find the velocity of the car at the end of 10 sec. also find the distance traveled by the car while accelerating.