

CLASS 9

SCIENCE

EXTRA QUESTIONS

Class 9 Science Chapter 4 Describing Motion Around Us – Extra Questions with Answers

Extra practice questions for Class 9 Science Chapter 4 (Describing Motion Around Us), beyond the textbook. These Class 9 Science Chapter 4 important questions are handy for last-minute exam practice.

Contents

Very Short Answer Questions (1 mark)

Short Answer Questions (2–3 marks)

Higher-Order Thinking / Application Questions

Extra practice questions for Class 9 Science Chapter 4 (Describing Motion Around Us), beyond the textbook. These Class 9 Science Chapter 4 important questions are handy for last-minute exam practice.

Very Short Answer Questions (1 mark)

Q1. Is speed a scalar or vector quantity?

Ans: Scalar.

Q2. What does the slope of a velocity-time graph represent?

Ans: Acceleration.

Q3. Write the equation of motion relating v , u , a , and t .

Ans: $v = u + at$.

Q4. What is negative acceleration called?

Ans: Retardation (or deceleration).

Q5. In uniform circular motion, does the speed of the object change?

Ans: No, speed stays constant; only direction (and hence velocity) changes.

Short Answer Questions (2–3 marks)

Q6. Distinguish between distance and displacement with an example.

Ans: Distance is the total path length covered (always positive, no direction), while displacement is the shortest straight-line distance between initial and final positions, with direction. Example: if a person walks 4 m east and then 4 m west back to the start, distance = 8 m, but displacement = 0 m.

Q7. What does the area under a velocity-time graph represent? Explain briefly.

Ans: The area under a velocity-time graph gives the displacement covered by the object during that time interval, since displacement is the product of velocity and time (or the sum of many such small products across the interval).

Q8. Why is uniform circular motion an example of accelerated motion?

Ans: Even though the speed remains constant, the direction of motion is continuously changing as the object moves along the circular path. Since velocity depends on both magnitude and direction, a continuous change in direction means the velocity is continuously changing, which is the definition of acceleration.

Higher-Order Thinking / Application Questions

Q9. A cyclist starts from rest and accelerates uniformly to reach a velocity of 10 m/s in 5 seconds. Using an equation of motion, describe how you would calculate the distance covered, without solving numerically, and identify the initial velocity used.

Ans: Since the cyclist starts from rest, initial velocity $u = 0$ m/s. The distance covered can be calculated using $s = ut + \frac{1}{2}at^2$, where a is found first from $v = u + at$ (using $v = 10$ m/s, $u = 0$, $t = 5$ s), and then substituted along with t into the distance equation.

Q10. Two position-time graphs are drawn for two runners: Runner A's graph is a straight line, while Runner B's graph is a curve that gets steeper over time. Compare their motion.

Ans: Runner A moves with uniform velocity, since a straight-line position-time graph indicates a constant slope (constant velocity). Runner B's velocity is increasing over time, since the graph curve becomes steeper (steeper slope means higher velocity), indicating Runner B is accelerating rather than moving at

constant velocity.

See also: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#)

Practice more: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#)

Quick revision: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#)