

Chapter – 7 | Motion – 01

QUIZ-01

1. What is the SI unit of speed?

- A. km/h
- B. m/s
- C. cm/s
- D. m/h

(B)

Explanation: Speed is measured in metres per second in SI units, denoted as m/s or m

2. Which of the following is a vector quantity?

- A. Distance
- B. Speed
- C. Displacement
- D. Time

(C)

Explanation: Displacement has both magnitude and direction, making it a vector quantity.

3. Which graph represents an object in uniform motion?

- A. Curved distance-time graph
- B. Straight line sloping distance-time graph
- C. Zigzag line on time axis
- D. Parabolic velocity-time graph

(B)

Explanation: A straight sloping distance-time graph indicates equal distance in equal time, i.e., uniform motion

4. What is the average speed of an object that travels 32 m in 6 seconds?

- A. 4 m/s
- B. 5.33 m/s
- C. 6 m/s
- D. 3.5 m/s

(B)

Explanation: Average speed = Total distance / Total time = $32 \div 6 = 5.33$ m/s.

5. Which of the following quantities can be zero for a moving object?

- A. Distance
- B. Speed
- C. Displacement
- D. Time

(C)

Explanation: If the object returns to its starting point, displacement is zero though distance may not be.

6. A car accelerates uniformly from 5 m/s to 10 m/s in 5 seconds. What is the acceleration?

- A. 1 m/s^2
- B. 0.5 m/s^2
- C. 2 m/s^2
- D. 3 m/s^2

(A)

Explanation: Acceleration = (Final velocity – Initial velocity) / Time = $(10 - 5)/5 = 1 \text{ m/s}^2$.

7. What does the area under a velocity-time graph represent?

- A. Acceleration
- B. Speed
- C. Distance/Displacement
- D. Time

(C)

Explanation: The area under a velocity-time graph gives the displacement of the object.

8. An object is moving with uniform circular motion. What remains constant?

- A. Velocity
- B. Speed
- C. Direction
- D. Displacement

(B)

Explanation: In uniform circular motion, speed remains constant but direction changes continuously.

9. Which equation represents the velocity-time relationship for uniformly accelerated motion?

- A. $v = u + at$
- B. $s = ut + \frac{1}{2} at^2$
- C. $v^2 = u^2 + 2as$
- D. $s = vt$

(A)

Explanation: This equation gives the final velocity when an object accelerates uniformly over time

10. If a train moves with uniform acceleration and covers 3 km in 300 s, what is the acceleration if final speed is 20 m/s and initial speed is 0?

- A. 0.25 m/s^2
- B. 1.0 m/s^2
- C. $1/15 \text{ m/s}^2$
- D. 0.5 m/s^2

(C)

Explanation: Using $v = u + at$ $v = u + at$, $a = (20 - 0) / 300 = 1/15 \text{ m/s}^2$.