

CHAPTER-7 | Motion

QUIZ
PART-05

1. First equation of motion is:

- A. $s = ut + 1/2at^2$
 B. $v = u + at$
 C. $v^2 - u^2 = 2as$
 D. $s = vt$ (B)

Explanation: It relates final velocity with initial velocity, acceleration, and time.

2. Second equation of motion is:

- A. $v = u + at$
 B. $s = ut + 1/2at^2$
 C. $v^2 = u^2 + at$
 D. $s = u / t$ (B)

Explanation: It gives displacement in uniformly accelerated motion

3. Third equation of motion is:

- A. $v^2 - u^2 = 2as$
 B. $v = u/t$
 C. $s = vt$
 D. $a = vt$ (A)

Explanation: It relates velocity, acceleration, and displacement

4. These equations apply when motion has:

- A. Variable acceleration
 B. Uniform acceleration
 C. Zero displacement only
 D. Circular path only (B)

Explanation: Equations of motion are valid for uniform acceleration

5. In $v = u + at$, u means:

- A. Final velocity
 B. Initial velocity
 C. Uniform speed
 D. Unit velocity (B)

Explanation: u stands for initial velocity.

6. A train starts from rest, so $u =$

- A. 1 m/s
 B. 5 m/s
 C. 10 m/s
 D. 0 m/s (D)

Explanation: Starting from rest means initial velocity is zero

7. 72 km/h equals:

- A. 10 m/s
 B. 15 m/s
 C. 20 m/s
 D. 25 m/s (C)

Explanation: $72 \times 5/18 = 20$ m/s.

8. If $u = 5\text{ m/s}$, $v = 10\text{ m/s}$, $t = 5\text{ s}$, then $a =$

- A. 1 m/s^2
 B. 2 ms^2
 C. 5 ms^2
 D. 10 ms^2 (A)

Explanation: $a = (v - u) / t = (10 - 5) / 5 = 1\text{ ms}^2$

9. If brakes reduce speed, acceleration is:

- A. Positive
 B. Negative
 C. Zero
 D. Infinite (B)

Explanation: Opposite acceleration is negative acceleration or retardation.

10. A bike slows from 30 m/s to 20 m/s in 3 s.

Magnitude of acceleration is:

- A. 3.3 ms^2
 B. 6.6 ms^2
 C. 10 ms^2
 D. 0.3 ms^2 (A)

Explanation: Magnitude = $|(20 - 30) / 3| = 10/3$
 $\approx 3.3\text{ ms}^2$