

CHAPTER-9 | Gravitation

QUIZ
PART-07

1. What is the equation of motion for vertical motion?

A. $v = u + g * t$

B. $v^2 = u^2 + 2gs$

C. $s = u * t + \frac{1}{2}g * t^2$

D. All of the above (D)

Explanation: All equations apply to vertical motion.

2. Final velocity at maximum height?

A. 0 m/s

B. 49 m/s

C. -49 m/s

D. 9.8 m/s (A)

Explanation: At max height, final velocity is 0.

3. What happens to velocity of a falling stone?

A. Increases

B. Decreases

C. Constant

D. Zero (A)

Explanation: Velocity increases due to gravity.

4. Gravitational force is given by which law?

A. Newton's Law

B. Universal Law of Gravitation

C. Hooke's Law

D. Coulomb's Law (B)

Explanation: Gravitational force follows Universal Law of Gravitation

5. Value of G?

A. $6.7 * 10^{-11} \text{ N} \cdot \text{m}^2 / \text{kg}^2$

B. $9.8 \text{ N} \cdot \text{m}^2 / \text{kg}^2$

C. $6.67 * 10^{-11} \text{ N} \cdot \text{m}^2 / \text{kg}^2$

D. $10 \text{ N} \cdot \text{m}^2 / \text{kg}^2$ (C)

Explanation: $G = 6.67 * 10^{-11} \text{ N} \cdot \text{m}^2 / \text{kg}^2$

6. Gravitational force between the Earth and Sun?

A. $3.57 * 10^{22} \text{ N}$

B. $5.67 * 10^{23} \text{ N}$

C. $7.87 * 10^{22} \text{ N}$

D. $2.57 * 10^{21} \text{ N}$ (A)

Explanation: Force between Earth and Sun is $3.57 * 10^{22} \text{ N}$

7. Time to reach max height with 49 m/s velocity?

A. 9.8 s

B. 5 s

C. 10 s

D. 1 s (B)

Explanation: Time to reach max height is 5 s.

8. Displacement when stone returns to same point?

A. Zero

B. Height

C. Distance

D. Max height (A)

Explanation: Displacement is zero as it returns to the same point

9. Total distance for a stone thrown upwards with 40 m/s?

A. 80 m

B. 160 m

C. 40 m

D. 120 m (B)

Explanation: Total distance covered is 160 m.

10. Net displacement for upward and downward motion?

A. Zero

B. Max height

C. Total distance

D. Twice height (A)

Explanation: Net displacement is zero when stone returns.