

# Grade 9 Physics Practice Exam

Physics · Answer Key · 22 Questions

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**1. A volleyball is served and travels in a curved path. What do we call this curved path?**

- A) Range
- B) Trajectory**
- C) Vertical leap
- D) Acceleration

**2. A stone is thrown horizontally from a cliff. What is its horizontal acceleration?**

- A)  $-9.8 \text{ m/s}^2$
- B)  $9.8 \text{ m/s}^2$
- C) Zero**
- D) It increases as it falls

**3. Which of the following quantities affects both the horizontal and vertical motion of a projectile?**

- A) Height
- B) Gravity**
- C) Angle of projection
- D) Horizontal velocity

**4. An athlete performs a long jump. At what part of the jump is the vertical velocity exactly zero?**

- A) At the moment of takeoff
- B) At the peak of the jump**
- C) Just before landing
- D) Throughout the entire flight

**5. If a projectile is launched at an angle of  $45^\circ$ , what happens to the vertical velocity after it passes the peak?**

- A) It remains zero
- B) It stays constant
- C) It increases downward (becomes more negative)**
- D) It decreases downward

**6. A marble rolls off a table. Which statement is true about its motion?**

- A) Its horizontal velocity decreases
- B) Its vertical velocity increases as it falls**
- C) It stops moving horizontally immediately
- D) Its vertical acceleration is zero

7. Which launch angle results in the maximum horizontal range?

- A) 30°
- B) 45°**
- C) 60°
- D) 90°

8. Two arrows are shot with the same speed. Arrow A is shot at 30° and Arrow B at 60°. How do their ranges compare?

- A) Arrow A goes further
- B) Arrow B goes further
- C) They have the same range**
- D) They both have zero range

9. What is the shape of the path followed by a projectile?

- A) Linear
- B) Circular
- C) Parabolic**
- D) Hyperbolic

10. A projectile is launched at 90° (straight up). What will its horizontal displacement be?

- A) Maximum
- B) Half of the height
- C) Zero**
- D) Equal to the height

11. A sepak takraw ball is kicked. If the total time in the air is 6 seconds, how long did it take to reach the highest point?

- A) 6 seconds
- B) 4 seconds
- C) 3 seconds**
- D) 2 seconds

12. The horizontal motion of a projectile is described as having:

- A) Constant acceleration
- B) Constant velocity**
- C) Changing velocity
- D) Increasing acceleration

13. What force acts on a projectile once it is in the air (ignoring air resistance)?

- A) Applied force
- B) Friction
- C) Gravity**
- D) Magnetic force

14. If you throw a ball faster horizontally from the same height, what happens to the time it takes to hit the ground?

- A) It takes longer
- B) It takes less time
- C) The time remains the same**
- D) The ball never hits the ground

15. Vertical motion is a type of:

- A) Uniform motion
- B) Free fall**
- C) Circular motion
- D) Zero-gravity motion

16. Which of the following best describes momentum?

- A) Force in motion
- B) Mass in motion**
- C) Energy in motion
- D) Change in speed

17. A 2,000 kg truck and a 1,000 kg car move at the same speed. Which has more momentum?

- A) The car
- B) The truck**
- C) They are equal
- D) Neither has momentum

18. What is the standard unit for momentum?

- A) kg·m/s**
- B) N·m
- C) Joules
- D) m/s<sup>2</sup>

**19. If an object is not moving, what is its momentum?**

- A) Equal to its mass
- B) Infinite
- C) Zero**
- D) 9.8

**20. A bowling ball's velocity is doubled. What happens to its momentum?**

- A) It is halved
- B) It stays the same
- C) It doubles**
- D) It quadruples

**21. Impulse is defined as the product of:**

- A) Mass and velocity
- B) Force and time**
- C) Mass and acceleration
- D) Distance and time

**22. Why do follow-throughs in sports like tennis help?**

- A) They decrease the mass of the ball
- B) They increase the time of contact, increasing impulse**
- C) They decrease the force applied
- D) They stop the ball's momentum