ST. ANDREWS SCOTS SR. SEC. SCHOOL

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(Session 2025-26)

Class – IX **Subject – Science** **Worksheet**

Gravitation

1. A body of mass 50 kg is placed on Earth. Find its weight. ($g = 9.8\ m/s^2$)

2. A man weighs 700 N on Earth. What is his mass? ($g = 9.8\ m/s^2$)

3. A person of mass 80 kg goes to the Moon. Find his weight there. (Take g on Moon = 1/6th g on Earth).

4. A stone is dropped from a height of 20 m. Find the time taken to reach the ground. ($g = 10\ m/s^2$)

5. A body is dropped from a height of 45 m. Find the velocity with which it strikes the ground. ($g = 9.8\ m/s^2$)

6. A ball is thrown upward with a velocity of 15 m/s. Calculate the maximum height it reaches. ($g = 10\ m/s^2$)

7. A ball is thrown vertically upward with velocity 25 m/s. Find the time taken to reach the maximum height.

8. A stone is thrown upward and takes 4 s to come back to the ground. Find the initial velocity. ($g = 10\ m/s^2$)

9. A boy of mass 40 kg has weight ____ on Earth. Calculate it.

10. An astronaut of mass 72 kg has a weight on Moon equal to ____ N. Find it. ($g = 1.63\ m/s^2$)

11. A stone falls freely from rest and covers 45 m in the last second before striking the ground. Find the total height from which it was dropped. ($g = 9.8\ m/s^2$)

12. A body is thrown vertically upward with velocity 10 m/s. Calculate the total time of flight.

13. Calculate the final velocity of a freely falling object after falling through a height of 80 m. ($g = 9.8\ m/s^2$)

14. A stone falls from the top of a tower 122.5 m high. Find the time it takes to reach the ground. ($g = 9.8\ m/s^2$)

15. A ball is dropped from a height of 100 m. Find the speed with which it hits the ground.

16. A bullet of mass 50 g is falling freely. Find its weight.

17. A person weighs 600 N on Earth. What will be his weight on Moon? (g on Moon = 1/6 g on Earth)

18. A body of mass 90 kg is placed on Earth. Find the gravitational force exerted on it by the Earth.

19. A ball is projected upward with a velocity of 30 m/s. Find:
    (i) Maximum height reached
    (ii) Time to reach maximum height

20. A stone is thrown upward with a velocity of 20 m/s. How long will it take to return to the ground?

21. One stone is dropped from the top of a tower. At the same time, another stone is thrown upward from the ground with a speed of 25 m/s. If the height of the tower is 100 m, after how much time and at what height from the ground will they meet?

22. A stone is dropped from a height of 80 m. At the same time, another stone is thrown upward from the ground with a speed of 20 m/s. Find the point (height) where they will meet.

23. From the top of a tower 50 m high, one stone is dropped and simultaneously another stone is thrown upward from the ground with velocity 15 m/s. Find the time after which they will meet and the distance from the ground where they meet.