

# Numericals

Practice. Learn. Succeed

Sub : Science

Grade: IX

Date: .....

Name: .....

ID No.....

1. Calculate the force of gravity on a body of mass 150 kg placed on the surface of earth. [Mass of earth  $6 \times 10^{24}$  kg, radius of earth =  $6.4 \times 10^6$  m,  $G = 6.7 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$ ]

---

---

---

---

---

2. Two objects A and B of masses  $m$  and  $4m$  are at a separation of 12 m. Where should a small particle of mass  $m_0$  be placed so that the net gravitational force on it due to these objects and is zero?

---

---

---

---

---

3. Two bodies of mass 1 kg and 2 kg, respectively are placed at a separation of 1 m. Find the acceleration of the bodies, assuming only gravitational forces to act.

---

---

---

---

---

4. When a ball is thrown vertically upwards, it goes upto a distance of 19.6 m. Find

- (i) the initial velocity of the ball,  
(ii) the time taken by the ball to fall back to the ground ( $g = 9.8 \text{ m/s}^2$ ).

---

---

---

---

---