

Chapter 10

GRAVITATION

EXAMPLE- 1:

Two spherical balls each of mass 1 kg are placed at 1cm apart. Find the gravitational force of attraction between them.

Solution:

Given, $m_1 = m_2 = 1 \text{ kg}$

$d = 1 \text{ cm} = 1 \times 10^{-2} \text{ m}$, $G = 6.67 \times 10^{-11} \text{ Nm}^2 / \text{kg}^2$

Gravitational force $F = \frac{G m_1 m_2}{d^2}$

$$F = \frac{6.67 \times 10^{-11} \times 1 \times 1}{(1 \times 10^{-2})^2}$$

$$F = \frac{6.67 \times 10^{-11}}{10^{-4}} = 6.67 \times 10^{-7} \text{ N}.$$