MIND MAP

The force with which earth pulls the objects towards it is called the gravitational force of earth or gravity.

Newton's law of gravitation states that every object in the universe attracts every other object with a certain force which is directly proportional to the product of their masses and inversely proportional to the square of the distance between them $F = G\frac{m_1 \times m_2}{R^2}$

'G' is the universal gravitational constant whose value is equal to $6.67 \times 10^{-11} Nm^2 / \text{kg}^2$.

Archimedes' principle states that when a body is partially or wholly immersed in a liquid, it experiences an upthrust which is equal to weight of liquid displaced by the object.

Density of a substance is mass per unit volume. Its unit is (g/ cm^3) or (kg/m^3)

The uniform acceleration produced in a freely falling body due to the gravitational force of the earth is known as acceleration due to gravity.

$g = 9.8 \, \mathbf{m / s^2}$

Equation of motion for freely falling bodies

$v = u + gt$

$h = ut + \frac{1}{2} gt^2$

The weight of a body is the force with which it is attracted towards the earth.

Relative density of a substance is the ratio of density of substance to that of water.

The falling of a body from a height towards the earth under the gravitational force of earth is called free fall.

Mass of a body is the quantity of matter contained in it.

Pressure $= \frac{\text{Force}}{\text{Area}}$