Brainbox learn easy

Chapter 10

GRAVITATION

➢ Thrust & Pressure:

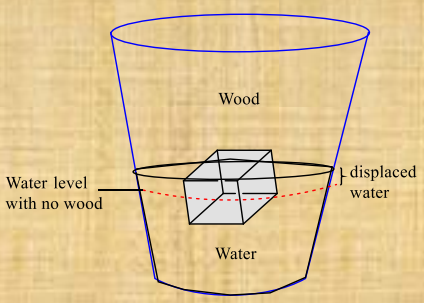
- Thrust is the force acting on an object perpendicular to the surface.
- Pressure is the force acting on unit area of a surface
- $\text{Pressure} = \frac{\text{Thrust}}{\text{Area}}$.
- The SI unit of thrust is N/m^2 or $N\,m^{-2}$. It is called Pascal(Pa).

➢ Pressure in Fluids:

- Fluids exert pressure in all directions.
- Pressure exerted on fluids is transmitted equally in all directions.

➢ Buoyancy:

- When an object is immersed in a fluid it experiences an upward force called buoyant force. This property is called buoyancy or upthrust.



➢ Why objects float or sink when placed on the surface of water?

- Take some water in a beaker. Take a piece of cork and an iron nail of the same mass. Place them on the water. The cork floats and the nail sinks.
- If the density of an object is less than the density of a liquid, it will float on the liquid and if the density of an object is more than the density of a liquid, it will sink in the liquid.

➢ Archimedes Principle:

- Archimedes' principle states that, when a body is partially or fully immersed in a fluid it experiences an upward force that is equal to the weight of the fluid displaced by it.'

➢ Relative Density:

- The relative density of a substance is the ratio of the density of a substance to the density of water. It is a ratio of similar quantities and has no unit.