Dr. Bharat Singh
Sher Shah College,

Notes for
B.Sc. Part – I
Paper – Ist

Surface - Tension

A liquid drop always assumes spherical shape. Rain drops and dew drops are observed to be spherical in shape. This is because, for a given volume, mathematically, sphere has minimum surface area. This property of the liquid to reduce its surface area is called surface tension. We can also define surface tension as follows –

"Surface Tension is defined as the force per unit length acting on either side of a line drawn in the liquid surface in equilibrium, the direction of the force being tangential to the surface and perpendicular to the line."

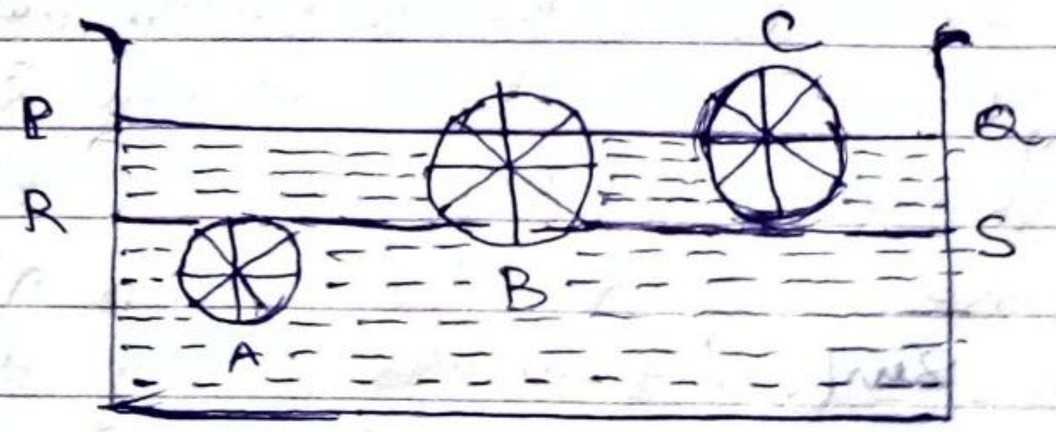
It is measured in Newton per meter in S.I. units.

Laplace, explained the phenomena of surface tension on the basis of the molecular theory as follow :–

Molecular theory of surface tension :–

The molecules of a liquid attach each other. This force of attraction between them is called the force of Cohesion. The force of Cohesion varries inversely as some high power of the distance. It, therefore, becomes negligible at an appreciable distance from molecules.

The maximum distance up to which the



force of Cohesion between two molecules can act is called the molecular range. It is of the order of 10^{-9} meter being different from different substances.

→
(P.T.O)