PARALLELLOGRAM LAW OF FORCES II

AIM

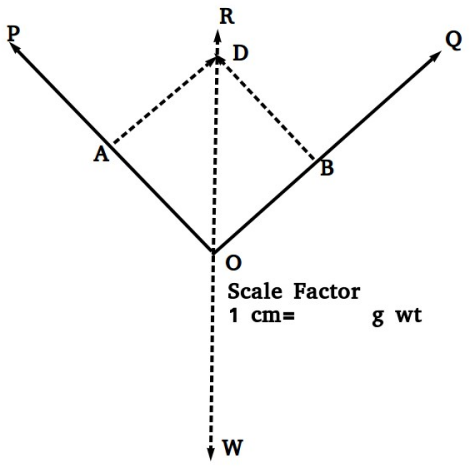
1) To find the relative density of the given body using parallelogram law of vectors.

APPARATUS

Gravesand's apparatus, slotted weights, given body, water, glass plates, paper,pins etc.

THEORY

If **P** and **Q** are the known weights and **W** is the weight of the unknown body, which are in equilibrium and acting as co-planar concurrent forces, then according to the Parallelogram law of vectors



W = Diagonal x Scale Factor

Where the diagonal vector represents the resultant of the forces P and Q

Relative density of solid = $\frac{\text{Weight of solid in air}}{\text{Loss of Weight in water}}$

= $\frac{W_1}{W_1 - W_2}$ where W_1 is the weight of the body in air and W_2 is that in water

OBSERVATIONS

Scale Factor 1 cm = g wt

Body in	Trial No	P g wt	Q g wt	OA cm	OB cm	Length of the Diagonal (OD) cm	Mean Weight g wt
Air	1 2 3 4						W_1 =
Water	1 2 3 4						W_2 =

Relative Density of the given body = $\frac{W_1}{W_1 - W_2}$ = =

RESULT:

Relative Density of the given body =