

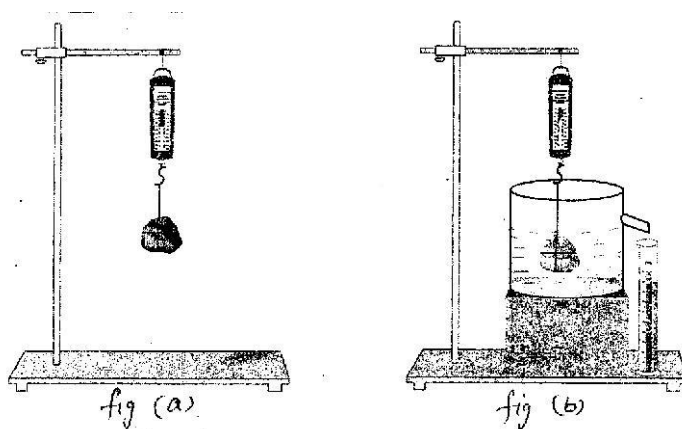
Class IX

EXPERIMENT No: 3

AIM: To establish the relation between the loss in weight of a solid when fully immersed in-

- tap water
- strongly salty water, with the weight of water displaced by taking at least two different solids.

Apparatus / material required : An overflow-can, a wooden block, a measuring cylinder (of least count of 1 ml), a spring balance, two small solid non porous objects, tap water, strongly salted water, thread, laboratory stand (tap water and strongly salted water should be taken of known density)



Procedure :

1. Find the range and least count of spring balance and measuring cylinder.
2. Ensure that pointer of spring balance is at zero mark, when no mass is attached to it. If not, then note the zero error.
3. Place an overflow-can on a wooden block and full it with tap water until the water begins to flow from its spout means the level of water in the over flow-can is up to its brim.
4. Tie one of the two given solid object with a thread and suspend it from the hook of spring balance, already clamped in the laboratory stand as shown in fig (a) of solid object in air. Note the reading.
5. Keep a empty measuring cylinder under the spout of the overflow-can to collect water.
6. Immerse the solid fully into the tap water in overflow can as shown in fig (b)
7. Collect the water displaced by the solid in the overflow can that flows out in the measuring cylinder.
8. Wait till the last drop of excen water flows out.
9. Note the volume of tap water collected in the measuring cylinder.

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10. Note the reading to get mass of solid object in tap water. record the observation.
11. Repeat the whole procedure for second objects and for both object taking strongly salted water.

Observation :

1. Range of spring balance = _____g
2. Least count of the spring balance = _____g
3. Acceleration due to gravity (g) = _____ms⁻²

		(For A) Water tap					
S No	Solid object	Reading of spring balance, when solid object is in air	Reading of the spring balance, when solid object is fully immersed in tap water	Loss in weight of the solid when fully immersed in water	Volume of water collected in measuring cylinder	Weight of tap water collected in measuring cylinder $W_{tap} = V \times \rho_{water}$	Difference in weight of solid and displaced water $W_{sTap} - W_{wTap}$
	First		Salted Strongly (For B)		Water)		
	Second						

Repeat the same observation methodology by replacing tap water with strongly salted water

Precaution :

1. Ensure that the pointer is at zero mark in the spring balance, before using it.
2. Hang the spring balance vertically with the laboratory stand.
3. The density of solid be larger than that of liquid, so that it sinks in it.
4. The solid objects used should be non porous otherwise they will absorb some water.
5. While recording the volume of displaced water, the line of sight should be at the same level as that of the lower meniscus of water.
6. The readings of the spring balance should be taken only after its pointer comes to rest.

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