

TOPIC:

Quality check for Soft Drinks [/water]

AIM:

To determine the refractive index of the given transparent liquid using travelling microscope.

FORMULA

USED:

The refractive index of liquid,

$$\mu = \frac{\text{real depth of liquid}}{\text{apparent depth of liquid}} = \frac{(C-A)}{(C-B)}$$

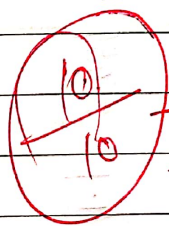
where,

A = microscopic reading when tip of the pin is focused directly.

B = microscopic reading when tip of the pin is focused through the liquid.

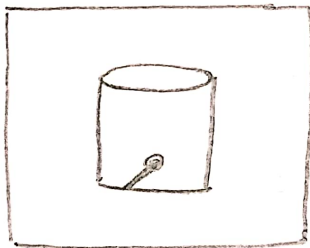
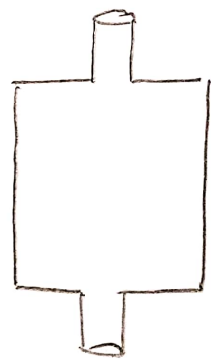
C = microscopic reading when saw dust sprinkled on the surface of the liquid is focused.

RESULT:

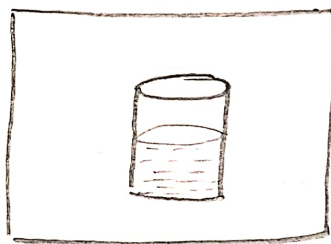
Refractive index of the given liquid (water) is found to be 1.35.Himanshu
19/09/19
19BCE2105

Teacher's Signature _____

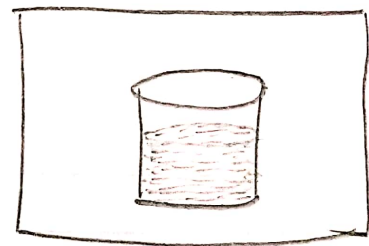
Exp. 7



(A)



(B)



(C)

least count of travelling microscope = $\frac{0.001 \text{ cm}}{100}$

Volume of water in the beaker	clear image of tip of the pin (Reading A)			clear image of tip of the pin seen through the liquid (Reading B)			clear image of the saw dust scattered on the surface of liquid (Reading C)			C-A	C-B	μ
	MSR (cm)	VSR (cm)	OR (cm)	MSR (cm)	VSR (cm)	OR (cm)	MSR (cm)	VSR (cm)	OR (cm)			
40 mL	3.05	4.1	3.054	3.75	0.9	3.750	6.7	3.6	6.7026	3.6426	2.9526	1.23
60 mL	3.05	4.1	3.054	3.80	5	3.805	5.35	2.5	5.375	2.321	1.57	1.47
VSR = VSC \times LC; Observed Reading = MSR + VSR										Mean =	1.35	