Medical Physics

Refractive Index of Glasses

Experiment Six

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Refractive index of glass

By real and apparent depth using a traveling microscope

Purpose:

To measure the refractive index of glass.

Apparatus:

1-Traveling microscope.

2-Slap of glass.

3- Object like paper that had written with (x).

Experimental Details:

1. Place the paper that had written (x).

2. be careful, adjust the cross- hairs of the microscope so that you can be clearly seen without strain.

3. Place the microscope vertically above the object (x) and adjust the height of the instrument until the object (x) is in sharp focus with no parallax between their image and the cross- hair, Read the vertical venire scale of the microscope and record the reading, this reading is (R_1).

4. Place the glass vertically above the object (x) and adjust the height of the instrument until the object (x) is in sharp focus with no parallax

between their image and the cross- hair, Read the vertical venire scale of the microscope and record the reading, this reading is (R_2).

5. Place the object (x) above the glass and place the microscope vertically above the object (x) adjust the height of the instrument until the object (x) is in sharp focus with no parallax between their image and the cross- hair, Read the vertical venires scale of the microscope and record the reading, this reading is (R_3).

Readings & Results:

For first attempt find **n** and second attempt find the percentage of error of **n** compare with the real value of refractive index of glass that equal to (n= 1.52).

Use this equation below to write your reading.

$$\boldsymbol{n = \frac{R_3 - R_1}{R_3 - R_2}}$$