GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ

SESSION: 2020-2021

CLASS-X A, B, C, D, E, F

SUBJECT: PHYSICS PRACTICAL

INSTRUCTIONS: 1)Parents are expected to ensure that student must write all experiments in Guided Physics Practical Workbook (D.N. Publications).

2) Observations and reading will be done, when the school will re-open.

3) Well labelled diagram will be made on the left page only.

4) Each experiment should be written on a separate page.

EXPERIMENT No.5

AIM: To show that after refraction through a glass slab, the emergent ray is parallel to incident ray in a glass block.

APPARATUS USED: A glass block, a drawing board, a white sheet of paper, pencil, ruler, board pins, protractor and common pins.

LAWS OF REFRACTION:

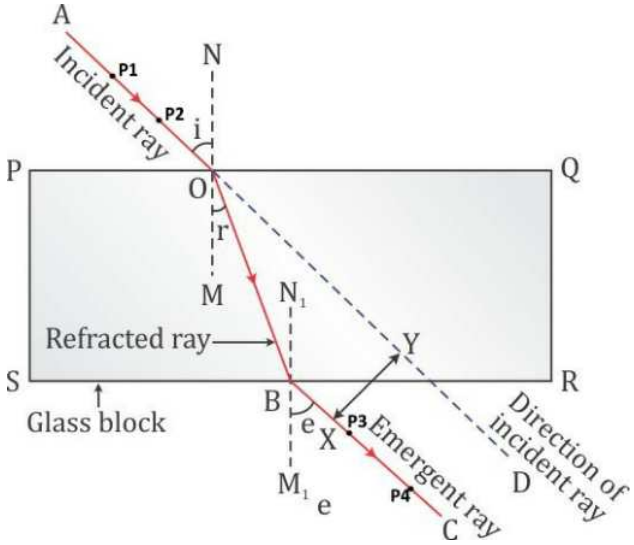
1) The incident ray, the refracted ray and the normal at the point of incidence, all lie in the same plane.

2) The ratio of the sine of the angle of incidence **i** to the sine of the angle of refraction **r** is constant for the pair of given media.

OBSERVATIONS AND CALCULATIONS:

Sl.No.	Angle of incidence ray i (in degrees)	Angle of emergent ray e (in degrees)
1		
2		
3		
4		

RESULT: As observed from the observation sheet, the emergent ray makes the same angle with the glass block as made by the incident ray. This shows that emergent ray goes parallel to the incident ray.



EXPERIMENT NO.6

AIM: To determine the refractive index of the material of the glass block.

APPARATUS USED: A drawing board, a glass block, drawing pins, common pins, a white sheet of paper, compass, protractor, pencil and ruler.

LAW USED: According to Snell's law, the ratio of the sine of the angle of incidence **i** to the sine of the angle of the refraction **r** is constant for the pair of given media.

Numerically, this constant ratio is equal to the refractive index of the second medium with respect to the first medium.

Refractive index (n) = sin i/sin r

= (FH/FO)/(KG/GO)

= (FH/FO)/(KG/FO)

= FH/KG

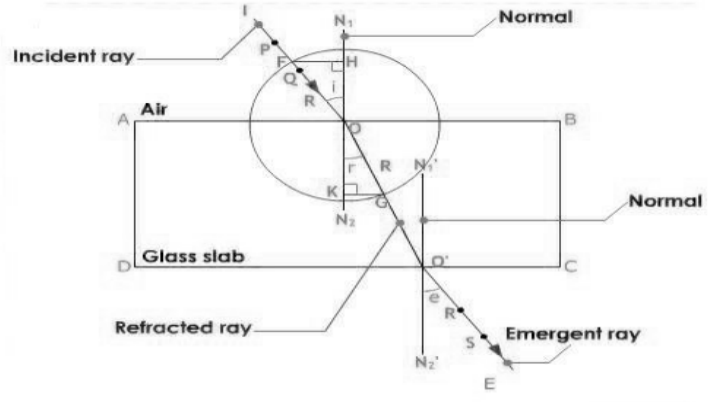
OBSERVATIONS AND CALCULATIONS:

Sl.No.	Angle of incidence i (in degrees)	FH (in cm)	KG (in cm)	Refractive index (n)=FH/KG
1				
2				
3				
4				

Mean refractive index = (....+....+....+....)/4

= .....

RESULT: The refractive index of a given glass block as obtained from the above experiment =.....



EXPERIMENT No.7

AIM: To investigate the deviation of a ray of light after it suffers total internal reflection from one face of a glass block.

APPARATUS USED: A glass block, a drawing board, a white sheet of paper, ruler, board pins, protractor and common pins.

TOTAL INTERNAL REFLECTION: When light travels from denser medium to rarer medium at the angle of incidence greater than critical angle, then it is totally reflected.

OBSERVATIONS AND CALCULATIONS:

Sl.No.	Angle of incidence i (in degrees)	Angle of deviation d (in degrees)
1		
2		
3		
4		

From graph, **i1 = ...,** **i2= .....**

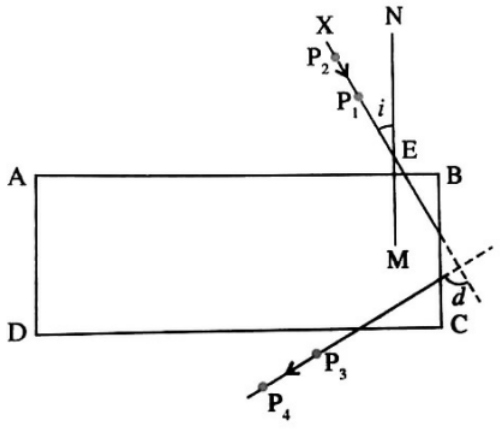
d1 = ..., **d2 = ...**

Slope = (d2 - d1)/(i2 -i1)

= .....

= .....

RESULT: Slope of the graph is 2.



EXPERIMENT No. 8

AIM: To determine the minimum deviation produced by the equilateral glass prism.

APPARATUS USED: A drawing board, a white sheet of paper, common pins, an equilateral prism, drawing pins, ruler, protractor and pencil.

PRINCIPLE: For a small angle of incidence, as the angle of incidence increases, the angle of deviation first decreases, reaches the minimum and then increases with the angle of incidence. The minimum value of angle of deviation reached is called the angle of minimum deviation.

OBSERVATIONS AND CALCULATIONS:

Sl.No.	Angle of incidence i (in degrees)	Angle of deviation d (in degrees)
1		
2		
3		
4		
5		
6		

RESULT: From graph, the angle of minimum deviation = ...