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Expt. No./ Name : ----------

Page No. ---01-------

Vision & Mission of Delhi Technological University

Vision:

To be a world class university through education, innovation and research for the service of humanity.

Mission:

1. To establish centres of excellence in emerging areas of science, engineering, technology, management and allied areas.
2. To foster an ecosystem for incubation, product development, transfer of technology and entrepreneurship.
3. To create environment of collaboration, experimentation, imagination and creativity.
4. To develop human potential with analytical abilities, ethics and the integrity.
5. To provide environment friendly, reasonable and sustainable solution for local and global needs.

Teacher's Signature : ----------

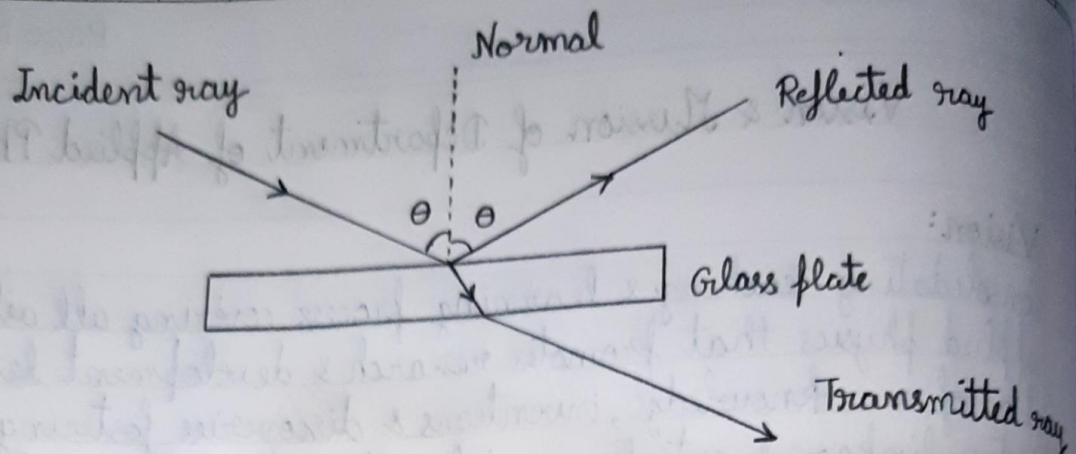
Vision & Mission of Department of Applied Physics

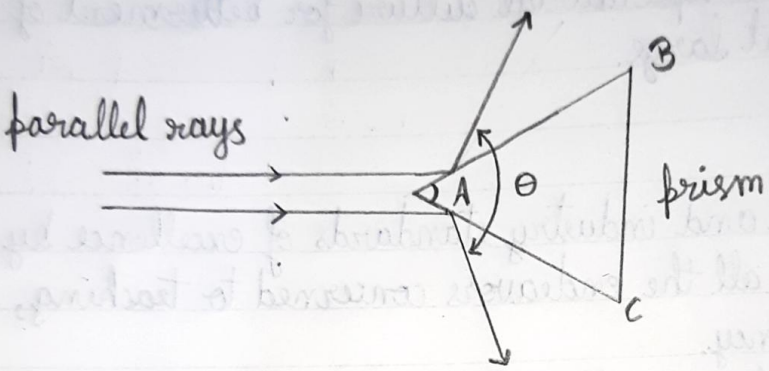
Vision:

Consolidating teaching & learning process covering all aspects of pure & applied physics that promotes research & development leading to creation of new knowledge, inventions & discoveries fostering institute-industry linkages & entrepreneurial culture for betterment of all its stake holders & society at large.

Mission:

1. To establish global and industry standards of excellence by generating new knowledge in all the endeavors concerned to teaching, learning, research & consultancy.
2. To develop close linkages with industry to undertake collaborative projects so as to enable young engineers to be a part of fast changing technological scenario.
3. To help our students in developing human potentials, intellectual interests, creative abilities & be lifelong learners to meet the challenges of national & global environment & be true professional leaders.
4. To stand up to the needs & expectations of our society by equipping & training our students to be good citizens, aware of their commitments & responsibilities, to make this world a better place to live.
5. To be a world class centre for education, research & innovation in various upcoming fields of Applied Physics.
6. To focus on the development of cutting-edge technologies & to foster an environment of seamlessness between academia and industry.





Observation table:

S.no.		Light reflected from side AB of prism Total = MSR + (LC × VSR)			Light reflected from side AC of prism Total = MSR + (LC × VSR)			Diff. b/w 2 posⁿ (2A)	Angle of prism (A)(°)
		MSR	VSR	Total	MSR	VSR	Total		
1.	V_1	240	25	240.416	120	13	120.216	120.2	60.1°
	V_2	59.5	12	59.7	299.5	14	299.733	119.967	59.9835°
2.	V_1	240	6	240.1	120	15	120.25	119.85	59.925°
	V_2	59.5	13	59.716	299.5	21	299.85	119.866	59.933°

Experiment 1.

Aim:
To measure the angle of prism using spectrometer.

Apparatus:
Spectrometer, prism, magnifying glass, sodium vapor lamp.

Theory:
When a beam of light strikes on the surface of transparent material, a portion of light is transmitted & the other portion is reflected. When a beam of light strikes on a plane surface, the angle of reflection will be the same as angle of incidence.
Angle of prism (A) is the angle between the two refracting edges of prism
If angle between 2 reflected ray is measured as θ,
then the angle of the prism is, $A = \frac{\theta}{2}$

Least count of an instrument gives the minimum measurement that can be taken from that instrument

Least count of spectrometer:
Least count = MSD / no. of divisions on vernier scale

As, 20 MSD = 10°
So, 1 MSD = $\left(\frac{10}{20}\right)^\circ$

No. of divisions on vernier scale = 30

Teacher's Signature : ----------

Calculations:

$$\text{Mean } A = \frac{60.1 + 59.933 + 59.925 + 59.9835}{4} = 59.985375^\circ$$

$$\text{Percentage error} = \frac{60 - A}{60} \times 100 = \frac{60 - 59.98}{60} \times 100$$

$$= \frac{0.02}{60} \times 100 = 0.034\%$$

$\therefore \angle A$ of prism is approxiamately 59.98 with 0.034% error
ie. $\angle A$ is around 60°.

Least count = $\frac{(1°/20)°}{30} = \left(\frac{1}{60}\right)° = 1'$

= 1 minute

Procedure:

1. Determine least count of spectrometer.
2. Set the telescope by focusing on distant object
3. Place prism on prism table with refracting ∠A towards collimeter.
4. In this case some of light falling on each face will be reflected & can be received with help of telescope.
5. Telescope is moved to one side to recieve light reflected from face AB & the cross wire are focused on image of slit. Readings of 2 verniers are taken.
6. Repeat the process for face AC.
7. The angle through which telescope is moved gives twice of the refracting ∠A of the prism.
8. Half of this angle gives refracting angle of prism.

Result:

The angle of prism = 59.98° approx

Percentage error = 0.034%

Precautions and sources of error:

1. Light coming from slit should be narrow and bright.
2. Telescope must be focused.
3. Reading of vernier scale should be taken carefully.
4. Parallax error must be avoided.
5. Prism table should be leveled with a spirit level before placing prism.