### INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous) Dundigal, Hyderabad - 500 043

#### LABORATORY WORK SHEET

				Date:	10/06/	2022					
Roll No: 21951A6754.Name: PIJYOTHI PRASANNA											
Exp No:	01	Experiment Name:D	LEERACTIONC	FRATING							
DAY TO DAY	Y EVALUATI	ON:									
		Algorithm	Source Code	Program Execution		Total					
	Preparation	Performance in the Lab	Calculations and Graphs	Results and Error Analysis	Viva						
May Marks	4					20					

Signature of Lab I/C

### START WRITING FROM HERE:

Obtained

AIM: To idetermine the wavelength of is igiven source of lasor using is plane bransmission grating.

APPARATUS: 1) Plane rdiffraction grating

- s) Masor vouve
- 3) Oscale
- 4) Prism table

FORMULA:

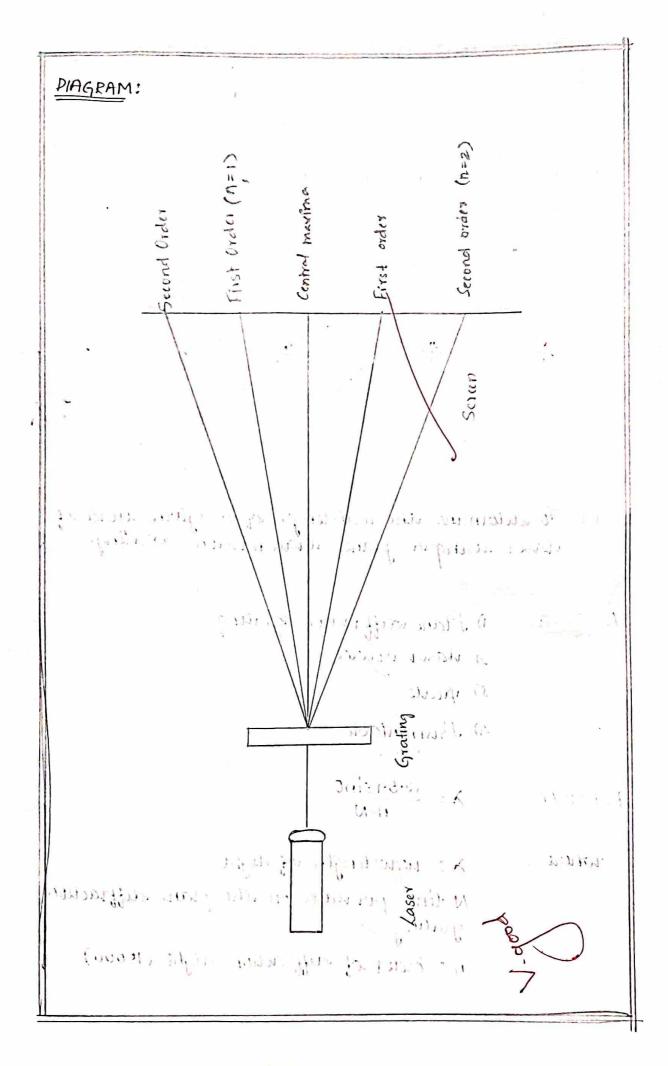
where

> : wavelength of light

N lines per nach on the plane diffraction

grating.

n: iorder vol diffraction light (15000)



# Tabular form:

-	-		V		1/1		
S-No.	Distance (D)	Order (n)	Zeft Gide (d1) (em)		$d = \frac{d_1 + d_2}{2}$ (cm)	$\frac{gin\theta = \frac{d}{\sqrt{d^2+0^2}}$	$\lambda = \frac{2.54 \sin 0}{\text{n·N}}$
1-1	94cm	· jest	33	32.5	32.5	0.32	5418.6
	94cm	2	78.5	6515	88.5	0.65	5587
2	97cm	1	53.5	347	33-75	5.35	5418%
- 4	97 cm	2	82.5	187.15	84.75	0.65	5503.3

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n) Kirotsking

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### RESULT:

Wavelingth of given laser light = 55033

## VIVA VOCE:

- 1) Define spontaneous remission.
- A) The vator in the excited state returns to the ground state thereby emitting a photon, without vary external inducement is called spontaneous emission.
- 2) Define estimulated remission.
- A) Eliminated remission is the process by which van incoming photon of a specific frequency wan interact with ran rexcited ratomic relection (sor other rexcited molecular state), reassing it to whop to a lower renergy level.

3) What is idiffraction?

Diffraction refors to various phenomena that occur when a wave encounters an obstacle or opening. It is defined as the interference or landing of waves faround the corners of an obstacle or through an aperture into the region of geometrical shadow of the vobstacle.

4) Estate the characteristics of LASER? 1) The vcharacteristics of LASER vare: It vis

- i) boherent
- ii) Directional
- (iii) monochromatic

Waruturgin of which dosor light 5535 N

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