	Date -					
E	xpt. No. 9. Fabry Perot Interferometer Page No.					
-	Apparatus: - i) Diode Laser	55 n 5 1				
	(ii) Plano-convex lens	- J. M.				
	(iii) Fabry-Perot Etalon					
	(iv) Diffuser screen with scale and need	le				
	(v) Optical rail	· · · · · · · · · ·				
	(vi) Power supply.	E LAND				
- 4	Desperation is all form the transfer	A + 10 + 11				
	Sto:-	a wrote				
	To find spacing of the Etalon	Carlot N				
	10 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	a series				
	Theory:	8281E				
	Fabru-Perot design contains plane surface that are partial	lly				
	reflecting so that multiple rays of eight are responsible	for the				
	creation of the observed interferomence patterns. For	high				
	resolution spectroscopy, where a resolution of MHz to	GH2 is				
	required, a Fabry perot Interferometer (FP) is used.					
	the FD consists of 2 plane mirrors mounted accurately	y parallel				
	to each other, with an optical spacing 'd' between them.					
	Wavelength of laser is 532 nm					
	To find spacing of the Etalon:					
	$t = nD^2 A / \chi_n^2$					

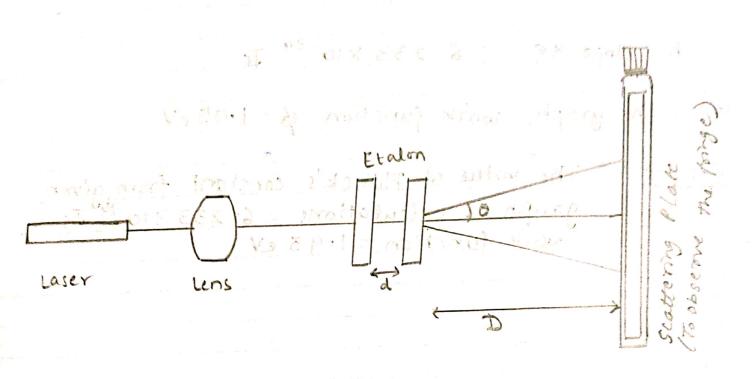
Units is the square of the radius of (min) the asince ring 4

 χ_m^2

7/n2

= Xm+n

Teacher's Signature : _



Observation Table :-

Fornge	oinge Radius (cm) X			Radius ²	$\chi_n^2 = \chi_m^2 = \chi_m^2$	$E = n D^2 \lambda$
No.	Centre Position	Fringe Position	Radius ccm)	X ² Ccm)		
Χm	60.05	53.8	6.25	39.00	205-86	3,178×10 ⁻³
Umil		50.7	9.35	87.43	139.80	3-447710-3
and the second		-48.9	11.15.1	124.32	261-48	3.740 ×10-3
Nm+2 Nm+3		471	12.95	167-7	246-42	2-66 × 10-3
		45	15-05	226-5	204.06	3 · 207 × 10-3
1km+4		44-4	15.65	244.92	soll to pri	som xoffe
Umts	e v v v	43.4	16.65	277· 2 2 325-8	-	
Nm+(42	18.05	325-8		1 State of the
Nm+7		39.7	20-35	414-12	to mast	10-27-17-6
Km+8	nog ma dangsi	A July and a second second	20-75	430-56	m to Ted	To reit or

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Expt. No.	Page No.					
2m2 that of mth sing						
Distance between the screen	and Fabry Perot Etalon D=					
12 12 12 12 12						
Km = Rine of mth fringe - centre	f fringe					
Scale reading = MSR (cm) + [v	5.D x 0.01 (mm) 7					
Sale 12 3 1131 Comp 12 1	20 400,000 m					
Calculation:	K. Pro St At 1					
Callette St. O. V.						
NX =D						
2d						
Mean value of t = (3.178 + 3.447.	+3.248+2.660 +3-207) × 10-3					
	5					
= 3148×10 ⁻³ m	= 3148×10 ⁻³ m					
Result!-						
The spacing between the chalon	The spacing between the chalon lenses are found to be equal to 3.148 x 10 ⁻³ m = 3.14 mm					
to 3.148 x 10-3 m = 3.14 mm						
10						
[0						
1 M/2 /3						
	Teacher's Signature :					
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