REET SHARMA 106030 **Performed On: 11/01/2022**

Experiment 3: Law of Malus

AIM: To verify law of Malus

APPARATUS: (1) Monochromatic source of light
(2) Two polarizers with angular scale from 0-3G0"
(3) Luxineter
(4) Metallic tube for mounting polarizer and analyzer

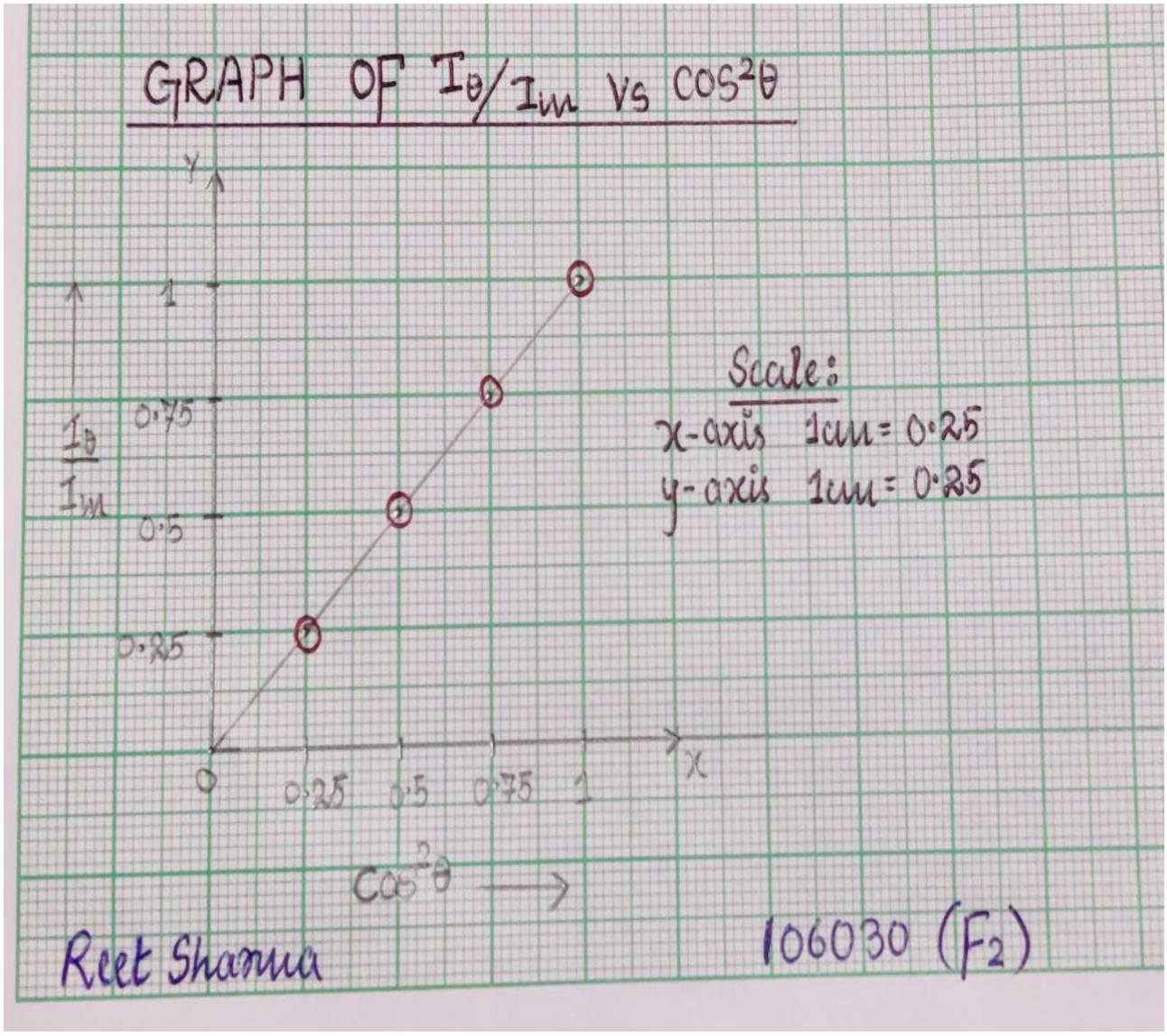
Table (3.1): Observations, Calculations and Results.

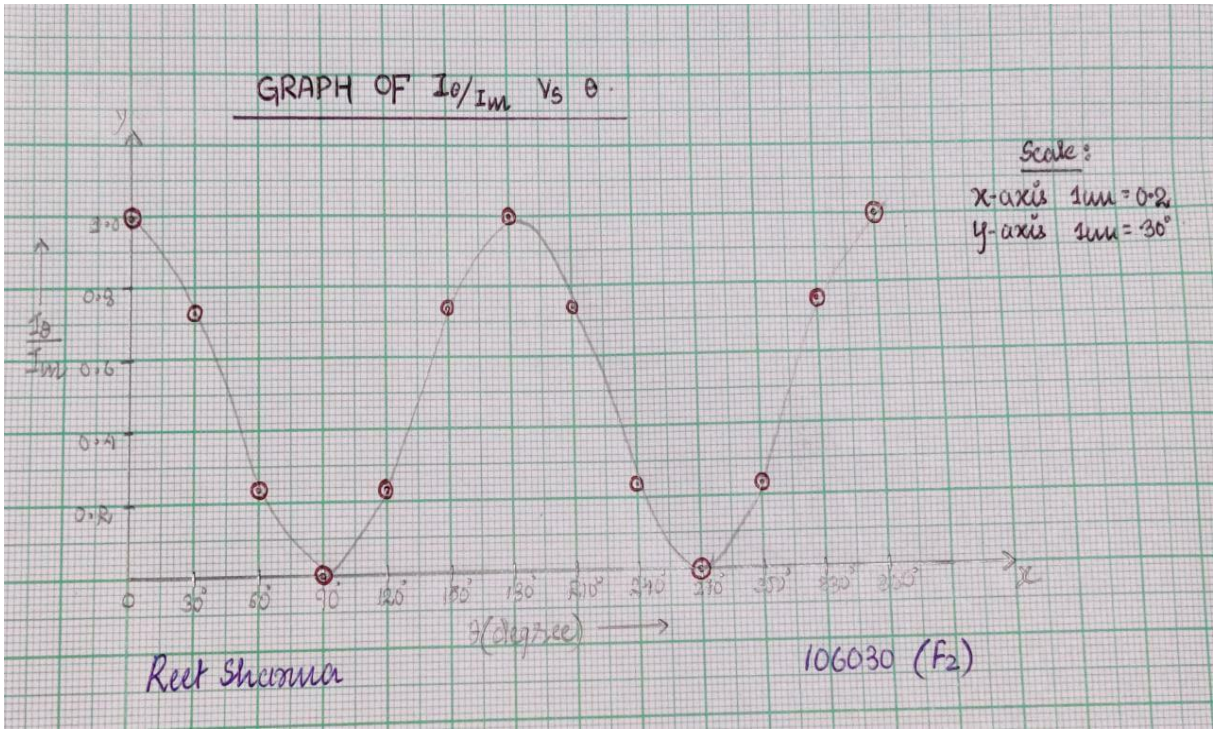
i. The least count of the angular scale on the analyzer = 1deg

ii. The maximum intensity **Im=10mA**

Sr. No.	The reading on the angular scale on the analyzer **θ** *deg*	The angle between polarizer & analyzer **θ** *deg*	Intensity through the analyzer **Iθ,mA**	Relative intensity $\frac{I_\theta}{I_m}$	$Cos^2\theta$
i	-	0	10 mA	1	1
2	-	30	7.5 mA	0.75	0.75
3	-	60	2.5 mA	0.25	0.25
4	-	90	0 mA	0	0
s	-	120	2.5 mA	0.25	0.25
6	-	150	7.5 mA	0.75	0.75
7	-	180	10 mA	1	1
8	-	210	7.5 mA	0.75	0.75
9	-	240	2.5 mA	0.25	0.25
10	-	270	0 mA	0	0
1 i	-	300	2.5 mA	0.25	0.25
12	-	330	7.5 mA	0.75	0.75
13	-	360	10 mA	1	1

GRAPH:


GRAPH OF I_θ/I_m Vs $\cos^2\theta$
Y
1
0.75
0.5
0.25
$\frac{I_\theta}{I_m}$
Scale:
x-axis 1cm = 0.25
y-axis 1cm = 0.25
0
0.25
0.5
0.75
1
X
$\cos^2\theta$ ⟶
Reet Sharma
106030 (F_2)



MY UNDERSTANDING OF THE EXPERIMENT:

This experiment helps us to learn and understand the properties of polarization. In this experiment, light is passed through polarizers, and the intensity of passed light depends on the square of cosine value of the angle between the two polarizers.