

CC4-PHYSICS (PRACTICAL)

Instructions:

1. Students are asked to solve **one programming problem or to perform virtually one experiment** from the list of problems/experiments given below.

2. Duration of the examination is 4 Hrs and and submission time is 30 mins afret examination.

3. Distribution of marks for Honours Program(CC and GE): FM-20

Programming: Algorithm/flow chart-5, Program-6, Program output with one set of data-3, Meaning of statement/facilities/procedures used in the program-6.

Lab-based experiment: Working formula with validity condition-3, List of equipments to be used-2, Experimental procedures-7, Calculation of results with supplied data-6, Comment(s) on what is learnt from the experiment-2

4. Distribution of marks for Program Course: FM-20

Working formula-2, List of equipments to be used-2, Experimental procedures-10, Calculation of results with supplied data-4, Comment(s) on what is learnt from the experiment-2

LIST OF QUESTIONS

1. Determine the wavelength of sodium light using Newton’s Rings.

Supplied data

Radius of curvature R=100 cm

Vernier constant=0.001cm

Ring no.	Microscopic reading on the (Direction of movement: left to right)			
	Left		Right	
	Main scale (cm)	Vernier	Main scale (cm)	Vernier
20	9.4	5	10.2	8
18	9.4	21	10.15	40
16	9.4	38	10.15	25
14	9.45	5	10.15	5
12	9.45	25	10.10	35
10	9.45	48	10.10	9
8	9.5	19	10.05	38
6	9.5	43	10.05	15

2. Familiarization with: Schuster's focusing, determination of angle of prism.

Vernier constant=20^{''}

Observation No.	Vernier No.	Readings at the first position of the telescope (1 st face)		Readings at the second position of the telescope (2 nd face)	
		Main scale	Vernier	Main scale	Vernier
1	1 st	153°20 ^I	3	333°	21
	2 nd	33°	24	213°	30
2	1 st	153°20 ^I	8	333°	25
	2 nd	33°	29	213°	35
3	1 st	153°20 ^I	7	333°	24
	2 nd	33°	28	213°	33

3. Determine wavelength of sodium light using plane diffraction grating.

Supplied data

No. of lines per cm=1000

Vernier constant=1^I

Order No.	Vernier No.	Reading for the diffracted images with the telescope at the			
		Left		Right	
		Main scale	Vernier	Main scale	Vernier
1	1st	263°	15	256°	20
	2 nd	83°30 ^I	0	76°30 ^I	13
2	1st	256°30 ^I	11	253°	0
	2 nd	87°	10	73°	16
3	1st	270°	20	249°	16
	2 nd	90°30 ^I	10	69°	24

CC9-PHYSICS (PRACTICAL)

Instruction:

1. Students are asked to solve **one programming problem or to perform virtually one experiment** from the list of problems/experiments given below.

2. Duration of the examination is 4 Hrs and and submission time is 30 mins afret examination.

3. Distribution of marks for Honours Program: FM-20

Programming: Algorithm/flow chart-5, Program-6, Program output with one set of data-3, Meaning of statement/facilities/procedures used in the program-6.

Lab-based experiment: Working formula with validity condition-3, List of equipments to be used-2, Experimental procedures-7, Calculation of results with supplied data-6, Comment(s) on what is learnt from the experiment-2

4. Distribution of marks for Program Course: FM-20

Working formula-2, List of equipments to be used-2, Experimental procedures-10, Calculation of results with supplied data-4, Comment(s) on what is learnt from the experiment-2

LIST OF QUESTIONS

1. Determine the Plank’s constant using LEDs of at least 4 diffetent colours.

Supplied data:

A.

Voltage-current data with red LED(wavelenght= 630 nm)															
Input voltage (volt)	1.56	1.62	1.66	1.68	1.70	1.72	1.74	1.76	1.78	1.80	1.82	1.84	1.86	1.88	1.90
Currect (μ A)	2	8	18	24	35	44	56	75	92	108	128	152	180	210	225

B.

Voltage-current data with green LED(wavelength= 546 nm)															
Input voltage (volt)	1.58	1.62	1.66	1.68	1.70	1.74	1.76	1.78	1.80	1.84	1.88	1.92	1.96	2.00	2.04
Current (μA)	1	3	6	9	12	26	35	46	58	93	128	174	226	281	332

C.

Voltage-current data with yellow LED(wavelength= 578 nm)															
Input voltage (volt)	2.06	2.10	2.14	2.16	2.18	2.22	2.26	2.30	2.34	2.38	2.42	2.46	2.48	2.50	2.54
Current (μA)	2	4	11	16	24	42	76	112	158	202	252	296	326	355	410

D.

Voltage-current data with blue LED(wavelength= 436 nm)															
Input voltage (volt)	2.28	2.32	2.36	2.40	2.42	2.44	2.48	2.52	2.56	2.60	2.64	2.68	2.70	2.74	2.78
Current (μA)	1	3	6	12	20	26	50	81	124	162	216	266	283	342	402