VIVEKANANDA COLLEGE, Alipurduar

CBCS EXAMINATION (SEM – I) 2021 Full marks: 20

(**Online mode**) Time: 4 hours

Paper code: PHYS DSC(P) Paper Name: Physics (Practical)

To determine the Moment of Inertia of a **Flywheel** write down and compute following questions:

1. Write down working formula. (2)
2. List down equipments to be used for this practical. (2)
3. Briefly Explain the Experimental procedures. (10)
4. Calculate the result by following data: (4)

Circumference of wheel (c) = 62.5 cm

Table: 1

For Calculation of radius of Axle

Serial No.	Observed Diameter (MSR + VSR x l.c)		Mean (cm)	Corrected mean Diameter	Radius r = d/2 (cm)	Mean radius(r) (cm)
	In one Direction	Inter direction				
1.	2.04	2.04	2.04	2.04		
2.	2.05	2.05	2.05	2.05		

Table: 2

For calculation of Moment of Inertia

SL. NO.	Total mass applied in gm (m)	No of observation made by Cord on end (n_1)	No. Of revolution made by fly wheel after the detachment of mass					Time in sec. (t)	Mean time in sec. (t)	I = $\frac{mgrn_1 t^2}{4\pi n_2(n_1+n_2)}$
			Complete revolution (a)	Distance of chalk mark from the point end (μ)	Empty end revolution (b = $\frac{\mu}{c}$)	Total n_2 = a+b	Mean n_2			
1.	100	10	28	46				74		
		10	29	53.5				74		
2.	150	10	37	30				85		
		10	43	40				91		
3.	200	10	51	47				92		
		10	52	52.5				98		

5. Comments on what is learnt from the experiment. (2)

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CBCS EXAMINATION (SEM – III) 2021 Full marks: 20

(**Online mode**) Time: 4 hours

Paper code: PHYS DSC3 (P) Paper Name: Physics (Practical)

To determine the temperature co-efficient of resistance by **Platinum Resistance thermometer**, write down following questions:

1. Draw circuit diagram and write down working formula. (2)
2. List down equipments to be used for this practical. (2)
3. Briefly explain the experimental procedure. (10)
4. Calculate the value of temperature coefficient (α) by following data: (4)

   Table: 1

   Calculation of Unknown resistance (R):

SL. NO.	Tempr (°C)	Resistance (Ω)		Null Point		Mean Distance (cm)	Unknown Resistance (Ω)	Mean value of Unknown Resistance (Ω)
		Left	Right	DC	RC			
1.	t_1° C room temperature = 25°C	R	4	50	45			R_1 =
2.		R	5	43	39			
3.		R	6	39	59			
1.		4	R	50	51			
2.		5	R	56	56.5			
3.		6	R	55	59			
1.	t_2° C steam temperature = 110°C	R	4	40.5	55.1			R_2 =
2.		R	7	30.5	42			
3.		R	6	32.1	45			
1.		4	R	41	50			
2.		7	R	35	43			
3.		6	R	39	45			

5. Discuss about this Practical and comments on what is learnt about this practical. (2)