VIDYASAGAR COLLEGE FOR WOMEN
PHSA – 1st SEMESTER
PAPER- CC-2 Practical
PRACTICAL EXAMINATION - 2022

Full Marks: 15 **Maximum Time 1 hour**

Answer any **one** question:

1. From the following sample table draw a desired graph on a graph paper and calculate the gravitational acceleration 'g'. Calculate the maximum error which can be considered in measuring 'g' in our lab set-up. Why do you need to measure oscillations by making the centre of oscillation for both the sides (side A and side B) for a bar pendulum? 5+5+3+2

No. of holes	Distance from center of gravity (cm)	Knife edge A		Knife edge B	
		Time for 20 oscillations t (sec)	Time period T = t/20 sec	Time for 20 oscillations t (sec)	Time period T = t/20 sec
9	45	32.5	1.625	32.0	1.6
8	40	31.0	1.55	31.5	1.575
7	35	30.5	1.525	30.5	1.537
6	30	30.0	1.5	30.0	1.5
5	25	29.0	1.45	29.5	1.475
4	20	32.0	1.6	32.0	1.6
3	15	33.75	1.69	34	1.7
2	10	38.5	1.925	38.5	1.925
1	5	52.5	2.625	54.5	1.725

2. What do you understand by moment of inertia (MOI)? Give the expression for the MOI of Flywheel mentioning all the symbols used in your equation. Calculate the vernier constant of slide callipers which is used in this experiment. Calculate the MOI of a flywheel using the following sample data. Comments on what is learnt from the experiment. 1+2+2+8+2

Radius of the axle r = 1.02 cm. Perimeter of the flywheel p = 62.5 cm.

SL. NO.	Total mass applied in gm (m)	No of observation made by Cord on end (n1)	No. Of rotation made by fly wheel after the detachment of mass					Time in sec. (t)	Mean time in sec. (t)
			Complete revolution (N)	Distance of chalk mark from the point end (s) cm	Empty end revolution n' = s/p	Total n2 = N+n'	Mean n2		
1.	100	10	28	46	0.74	28.74	29.3	74	74
		10	29	53.5	0.86	29.86		74	

2.	150	10	37	30	0.48	37.48	40.56	85	88
		10	43	40	0.64	43.64		91	
3.	200	10	51	47	0.75	51.75	52.29	92	90
		10	52	52.5	0.84	52.84		98	