

B.SC. PROGRAM (GENERAL) 1st SEMESTER PRACTICAL EXAMINATION 2020
KANDI RAJ COLLEGE
DEPARTMENT OF PHYSICS

SEMESTER: 1st
PAPER CODE: PHY-GCC-P-01

STREAM: Program Course (General)
Paper: Mechanics

Full marks: 20
Time: 2 Hours

Answer Any Five questions of the following:

5×4=20

1.

- i) Explain the term screw pitch.
- ii) What minimum length can be measured by a screw gauge ?
- iii) Define the term zero error.

1.5+1+1.5

2.

- a) If you use the formula : $S = x^3yz^5$ to calculate S by measuring x,y and z . Which quantity would you measure more accurately ?
- b) Is there any difference between the readings 10.0 and 10 ? explain.

2+2

3. What is moment of inertia of body? Explain the theory and the procedure to find the moment of inertia of a cylindrical body?

1+3

4.

- i) What is the minimum distance that can be measured by travelling microscope ?
- ii) How many types of elastic modulus are there for a physical body?
- iii) Find the young modulus of a rectangular bar having length=90 cm, breadth= 1.5 cm, depth= 0.3 cm having load-depression ratio $\sim 4 \times 10^4$ kg/meter.

1+1+2

5. Write the theory to find the modulus of rigidity of a wire by dynamic method. Why do you call the method a dynamical method? Calculate the maximum proportional error if length of the wire is 80 cm, time period of oscillation is 1.8 sec, radius of the wire is 1.8 mm, mass of the cylindrical bar is 1.9 kg, and its diameter is 7.5 cm. 2+1+1

Given, $\delta l = 0.2 \text{ cm}$, $\delta t = 1 \text{ sec}$, $\delta r = 0.001 \text{ cm}$, $\delta D = 0.01 \text{ cm}$, $\delta M = 0.001 \text{ g}$.

6.

i) In Katter's pendulum experiment mention two sources of error.

ii) Why does the pendulum call reversible pendulum ?

2+2

7. What do you understand by the coefficient of viscosity? Explain the theory to find the viscosity of a liquid using Stoke's method. 1+3

8.

a) What do you understand by the Vernier constant (V.C.) of a slide calliper?

b) Explain how you will measure the volume of a rectangular body with the help of a Slide Calliper.

1+3