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

SEMESTER: 1st **STREAM: Program Course (General)**
PAPER CODE: PHY-GCC-P-01 **Paper: Mechanics**

Full marks: 20
Time: 2 Hours

Answer Any *Five* questions of the following: **5×4=20**

1. What do you understand by the Vernier constant (V.C.) of a slide calliper? Explain how you will measure the volume of a rectangular body with the help of a Slide Calliper.

1+3

2. Define gravitational force. Explain how will you determine the spring constant by studying the motion of a spring? 1+3

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. Define stress and strain? How many types of elastics modulus are there for a physical body? Define them and only write their relations explaining each term. Find the young modulus of a rectangular bar having length=90 cm, breadth= 1.5 cm, depth= 0.3 cm having load-depression ratio ~ 4×10^4 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, $\delta l = 0.2cm, \delta t = 1\text{sec}, \delta r = 0.001cm, \delta l = 0.2cm, \delta D = 0.01cm, \delta M = 0.001g.$

6. Explain the theory and procedure to find the value of g using Kater's 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. What is bar pendulum? How will you measure value of g using bar pendulum? 1+3