Kandi Raj College
Department of physics
Semester 5 (General)

PHY-G-DSE-P-01 **MECHANICS** **Full Marks: 20**

Answer any four questions (5×4=20)

1. Define vernier constant of a vernier caliper. How can the diameter of a solid cylinder be measured with a vernier caliper? (2+3)
2. What is a sextant? How can the height of a building be determined with it? (1+4)
3. Define moment of inertia. Describe an experimental technique to determine the moment of inertia of a flywheel. (1+4)
4. How can the Young's modulus of a wire be determined with optical lever method? (5)
5. How can the modulus of rigidity of a wire be determined by Maxwell's needle? (5)
6. How can the elastic constants of a wire be determined by Searle's method? (5)
7. What is a bar pendulum? How can g be determined with it? (1+4)
8. Describe the construction of a Krater's pendulum. How is the acceleration due to gravity 'g' measured with it? (1+4)
9. Describe an experiment to study the motion of a spring and calculate the spring constant and g. (5)