

**U. G. 1st Semester Examination- 2021**

**PHYSICS**

**Generic Elective Course (GE)**

**Course Code- PHY-H-GE-P-1**

**[PRACTICAL]**

**(Mechanics)**

Full Marks-20

Time-2 hr

*Answer any two*

1. What are the advantages of a vernier scale ? What is the vernier constant? Define (a) screw pitch and (b) least count. If the pitch  $P = 1$  mm and the number of divisions in the circular scale be  $N = 100$  then calculate the least count of the instrument. (2+2+2+2+2)
2. What is simple harmonic motion (SHM)? Write down the differential equation of SHM for a spring with spring constant  $K$ . What is the difference between a simple pendulum and a compound pendulum? Will the period of a compound pendulum be the same at all places ? Write down the working formula to calculate  $g$  using the motion of spring. (2+2+2+1+3)
3. Define (a) moment of inertia and (b) radius of gyration and state the unit of moment of inertia. Write down the working formula to calculate moment of inertia of a flywheel. What is the parallel axis theorem ? (5+3+2)
4. What do you mean by stress and strain ? Define (a) elastic limit, (b) Young's modulus and (c) bulk modulus. Write down the relations between different elastic constants. (1+2+2+2+3)