

**U. G. 3rd Semester Examination- 2020**

**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 is vernier constant? Determine the vernier constant for a slide calipers. What is screw pitch? Determine the screw pitch for a screw gauge. The vernier zero of slide calipers coincides with 4.3 cm of main scale and vernier 14 exactly coincides with 5 cm of main scale. What is the total reading?  
(2+2+2+2+2)
2. What is simple harmonic motion (SHM)? Define time-period and phase of a SHM. Write the differential equation of SHM for a spring with spring constant K. Write down the working formula to calculate g using the motion of spring.  
(2+3+2+3)
3. What are meant by 'moment of inertia' and 'radius of gyration'? Will the moment of inertia be different if the axis of rotation changes? Write down the working formula to calculate moment of inertia of a flywheel.  
(5+2+3)
4. What is elasticity? For a material how many elastic constants are there? Write down the relations between different elastic constants. Write down the working formula to calculate Young's modulus (Y) of a bar. Does Y depend on the thickness of the bar?  
(2+1+3+2+2)