

**Kandi Raj College**  
**Department of Physics**  
**5<sup>th</sup> Semester Internal Examination 2021**  
**Course: Programme (General)**  
**Subject: Physics**

**Paper: Mechanics (PHY-G-DSE-T-01)**

**Answer Any five question:**

**5×2=10**

1. Find the work done in moving an object along a vector  $\vec{r} = 3\hat{i} + 2\hat{j} - 5\hat{k}$  by the force  $\vec{F} = 2\hat{i} - \hat{j} - \hat{k}$
2. What is Inertial and non- inertial frame of reference?
3. What is Simple Harmonic Motion (SHM)? Write the Differential equation of a SHM.
4. Find the expression of kinetic energy of SHM. What is its maximum value?
5. Write down the postulates of relativity. What is time dilation?
6. Show that incase central force areal velocity is constant.
7. What are the differences between elastic and inelastic collisions?

**Paper: Physics Workshop Skill (PHY-G-SEC-T-03)**

**Answer Any Five Questions.**

**5×1=5**

1. Define unit.
2. What is the dimension of Energy?
3. What do you understand by vernier constant of a slide caliper?
4. What is screw pitch of a screw gauge?
6. What is zero error?
7. The vernier constant of a slide caliper is .001 cm. The measured length of a rod is 5.336 cm. The instrument has zero error +13 divisions. What is its corrected length?

