

**INTERNAL ASSESMENT 2020**  
**KANDI RAJ COLLEGE**  
**DEPARTMENT OF PHYSICS**

**SEMESTER: 1<sup>st</sup>**  
**PAPER CODE: PHY-GCC-T-01**

**STREAM: Program Course (GENERAL)**  
**Paper: Mechanics**

**(You can write the answer in English or Bengali Language)**

**Full marks: 10**

**Answer Any Five questions of the following:**

**5×2=10**

1. What are the differences between Inertial and non-inertial frame of references?
2. 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  $\vec{F} = 2\hat{i} - \hat{j} - \hat{k}$ .
3. What are the differences between elastic and inelastic collisions?
4. Show that in case central force areal velocity is constant.
5. What is Simple Harmonic Motion (SHM)? Write the Differential equation of a SHM.
6. Write down the postulates of special theory of relativity. What is length contraction?
7. What should be the speed of electron so that its relativistic mass is twice its rest mass?