B.Sc DEGREE EXAMINATION, EVEN SEMESTER 2021
III Year VI Semester
Relativity and Quantum Mechanics

Max.marks :25

Answer any **FIVE** questions $(5 \times 5 = 25)$ Marks

1. With the help of Lorentzs transformation, obtain the equations for length contraction and time dilation. Explain the results.
2. Explain the principle, construction and working of electron microscope.
3. Derive Schrodingers wave equation and mention the properties of wave functions.
4. Obtain the free particle solution for a particle in a box. Discuss the outcomes.
5. Explain reduced mass. Solve the two body problem in CM frame.
6. Explain Davisson and Germers experiment and discuss its significance.
7. Apply Schrodingers wave equation for linear harmonic oscillator.