Course Code: PHS 2456   **Time: 3 Hours**

Course Title: Quantum Physics & Relativity   **Max. Mark: 75**

PART – A

Answer Any FIVEQuestions   **(5x 15 = 75)**

1. Derive an expression for Compton Shift and wavelength of scattered Photon

2. Describe Davisson and Germer Experiment and show the effect of increasing electron energy on scattering angle

3. Obtain the expression for the energy eigen value and eigen function for a particle in an infinite potential well, hence normalize the wavefunction.

4. Explain in detail, the particle having energy lower than the barrier potential can penetrate through a barrier.

5. Deduce the equation of the energy of a harmonic oscillator by Schrodinger method.

6. Describe the Michelson –Morley Experiment and explain the physical significance of the negative results.

7. Obtain the formula for length contraction and Time Dilation.

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