

CL6_Q1. The central mystery of quantum mechanics lies in the single particle quantum interference. Do you understand why $|\psi_1 + \psi_2|^2$ is the resultant intensity?

CL6_Q2. If an electron and a proton have energy of 10 MeV, calculate their de Broglie wavelength.

CL6_Q3. Give a brief account of the Fourier transform.

CL6_Q4. An electron accelerated through some potential difference, crosses two points separated by a distance of 3m in $1\mu\text{s}$ with a steady state velocity. Calculate the de-Broglie wavelength of the accelerated electron and hence calculate the potential difference through which it has been accelerated.