CL14_Q1. A particle of mass m and total energy E moves from a region of constant potential V_1 to a region of potential V_2 . If $E < V_2$ find the associated wave function and reflection coefficient for the particle experience a step potential.

CL14_Q2. Explain the term penetration depth for a step potential.

CL14_Q3. An electron with K.E $10\ eV$ is moving from left to right along the x-axis. The potential energy is $V = 0$ for $x < 0$ and $V = 20\ eV$ for $x > 0$. Sketch the wavefunction in the two regions.

 CL14_Q5. A spherical dust particle of radius $10^{-5}m$ and density $10^4\ Kg/m^3$, moving at a speed of $10^{-2}m/s$ encounters a step potential of height equal to twice the K.E of the particle. Estimate the penetration depth of the particle inside the step.