

CL15_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.

CL15_Q2. Explain the term penetration depth for a step potential.

CL15_Q3. A proton of energy 3 eV approaches a potential step of height 4 eV. Evaluate the possible depth of penetration into the classically forbidden region.

CL15_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.