

Problems

Q.1 An electron is confined in an infinite well of 30 cm width.

(a) What is the ground state energy?

(b) What is the probability that the electron would be found in the left-hand third of the well?

(c) If the electron instead has an energy of 1.0 eV, what is the probability that the electron would be found in the left-hand third of the well?

d) For 1-eV electron what is the distance between nodes.

Q.2 For a particle in an infinite well prove:

$$\int_0^a \psi_n^*(x) \psi_m(x) dx = \delta_{nm}$$

Q.3 For a particle in infinite well calculate the average value of the position and linear momentum.