

**CL19\_Q1.** The ground state energy of an electron in an infinite potential well is  $5.6 \times 10^{-3}$  eV. What will be the ground state energy if the width of the well is doubled?

**CL19\_Q2.** Elaborate the concept of parity as applied to Eigen functions. When is it possible to describe the parity aspect of Eigen functions?

**CL19\_Q3.** If the Eigen functions of a potential have definite parities, the one of the lowest energies always has even parity. Explain why.

**CL19\_Q4.** Show that  $E = h^2 n^2 / 8ma^2$  for an infinitely deep potential well of width of "a" can be obtained directly from the de-Broglie relation  $p = h/\lambda$ , by fitting an integral number of half de-Broglie wavelength  $\lambda/2$  into the width "a" of the well.

**CL19\_Q5.** Plot the probability densities for the first three excited quantum states of an electron trapped in an infinite potential well of width L.