**Answer on Question#37529, Physics, Quantum Mechanics**

In order to solve Schrodinger's stationary equation $H\psi = E\psi$ , one has to find eigenfunctions (wave functions), in which every wave function (in each state respectively) gives a certain eigenvalue (energy). So to say, we obtain eigenstates $\psi_n(q)$ for discrete spectrum and $\psi_f(q)$ for continuous spectrum, and corresponding energies at that states. If one has one energy for each state, then energy levels are not degenerate. In case if there are $N$ eigenstates for one energy, it is said that energy level is N times degenerate. For example, let us have a look at Hydrogen atom wave functions and energies (ignoring spin):

$E_n = -\frac{1}{n^2}$ and $\psi_n = R_{nl}(r)Y_{lm}(\varphi,\theta)$ . For fixed quantum number $n$ (fixed energy), quantum numbers might have values $l = 0..n-1; m = -l...l$ . There are $n^2$ different states (wave functions) for fixed energy level $E_n$ . Hence, energy levels for Hydrogen atom are $n^2$ times degenerate.