Answer on Question #61594, Physics / Quantum Mechanics

a) what is simple quantum mechanics?

b) what is wave function?

Solution:

a) what is simple quantum mechanics?

Quantum mechanics is the branch of physics, which describes the quantum systems and the laws of their motion. Difference between a quantum system from the classical system: action (an attribute of the dynamics of a physical system from which the equations of motion of the system can be derived) in quantum system compared to the Planck constant ($h=6,626×10^{-34}$ J×s).

In classical mechanics, objects exist in a specific place at a specific time. However, in quantum mechanics, objects exist in a haze of probability; they have a certain chance of being at point A, another chance of being at point B and so on.

b) what is wave function?

A wave function ψ (x,y,z,t) is a description of the state of a quantum system. It can help to calculate all the measured physical characteristics of the system, the probability of her stay at a certain point in space and evolution in time. The wave function can be found by solving the Schrödinger wave equation.

The physical meaning of the wave function: the value $|\psi(x, y, z, t)|^2 dV$ is proportional to the likelihood that a particle will be detected at time t in the volume dV in the neighborhood of point (x, y, z).