

"Quantum Dictation Questions"

1. The wavelength of the de Broglie.
2. Wave function. The physical meaning of the wave function.
3. Definition of a Hermitian operator. Eigenfunctions and eigenvalues Equation. Properties of Eigenfunctions and Eigenvalues of a Hermitian operator.
4. Definition of the commutator of two operators.
5. The expectation value of the operator of a physical quantity.
6. The Schrödinger wave (time-dependent) equation.
7. The stationary (time-independent) Schrödinger equation. The Hamiltonian operator.
8. Position and momentum operators.
9. Hamiltonian of a harmonic oscillator.
10. The uncertainty relation for the coordinate and momentum.
11. The concept of spin. The Pauli principle.
12. It is qualitative to explain the nature of the motion of a particle in a field with potential energy $U(x)$ of the given form.

Note

We will select 8 questions from Nos. 1-11, the cost of each answer is up to 2 points, the answer to question No. 12 "costs" 4 points.

One can get up to 20 points