

1. A.Einstein radiation theory. Induced and spontaneous transitions. Probabilities of transitions. Physical reason for spontaneous transitions. Spin–statistics theorem. Fermions and Bosons.
2. Klein-Gordon relativistic equation (Derivation).
3. Dirac equation. (Derivation) Pauli σ matrices. γ - representation of Dirac equation. Spinors and Bispinors.
4. Physical justification for the relationship between the Pauli spin matrices and the spin magnetic moment of fermions. Spin operator.