1

First Postulate: At a fixed time t_0, the state of a physical system is defined by specifying a ket $|\psi(t_0)\rangle$ belonging to the state space $\mathscr{E}$.

2

Second Postulate: Every measurable physical quantity $\mathscr{A}$ is described by an operator A acting in $\mathscr{E}$; this operator is an observable.

3

Third Postulate: The only possible result of the measurement of a physical quantity $\mathscr{A}$ is one of the eigenvalues of the corresponding observable A.

4

Fourth Postulate (case of a discrete spectrum): When the physical quantity $\mathscr{A}$ is measured on a system in the *normalized* state $|\psi\rangle$, the probability $\mathscr{P}(a_n)$ of obtaining the eigenvalue a_n of the corresponding observable A is:

$$\mathscr{P}(a_n) = \sum_{i=1}^{g_n} |\langle u_n^i | \psi \rangle|^2$$

where g_n is the degree of degeneracy of a_n and $\{ |u_n^i\rangle \}$ $(i = 1, 2, ..., g_n)$ is an orthonormal set of vectors which forms a basis in the eigensubspace $\mathscr{E}_n$ associated with the eigenvalue a_n of A.

5

Fifth Postulate: If the measurement of the physical quantity $\mathscr{A}$ on the system in the state $|\psi\rangle$ gives the result a_n, the state of the system immediately after the measurement is the normalized projection, $\dfrac{P_n|\psi\rangle}{\sqrt{\langle\psi|P_n|\psi\rangle}}$, of $|\psi\rangle$ onto the eigensubspace associated with a_n.

6

Sixth Postulate: The time evolution of the state vector $|\psi(t)\rangle$ is governed by the Schrödinger equation:

$$i\hbar \frac{\mathrm{d}}{\mathrm{d}t} |\psi(t)\rangle = H(t) |\psi(t)\rangle$$

where $H(t)$ is the observable associated with the total energy of the system.