two separate equations are obtained by solving equation (6)
first equation being:

$$-\sum_{i=1}^{n} \frac{h^2}{8\pi^2 M_i} \nabla_i^2 \psi_N(R) + E(R)\psi_N(R) = E_T \psi_N(R) \quad (7)$$

$$[\hat{T}_N + E(R)]\psi_N(R) = E_T \psi_N(R)$$

or $$E_T \psi_N(R) \quad (8)$$

$$\hat{H}_N(R)\psi_N(R) = E_T \psi_N(R)$$

Equation (8) is the nuclear Schrodinger Equation in which

$$\hat{T}_N = -\sum_{i=1}^{n} \frac{h^2}{8\pi^2 M_i} \nabla_i^2$$ is Kinetic energy operator

and $E(R)$ is Potential energy Operator, making $\hat{H}_N$ the nuclear Hamiltonian

Similarly $$-\sum_{j=1}^{n} \frac{h^2}{8\pi^2 m} \nabla_j^2 \psi_e(r,R) + V(r,R)\psi_e(r,R) = E(R)\psi_e(r,R)$$

$$[\hat{T}_e + V(r,R)]\psi_e(r,R) = E(R)\psi_e(r,R)$$

$$\hat{H}_e \psi_e(r,R) = E(R)\psi_e(r,R) \quad (9)$$

This is the electronic Schrodinger equation. Solution of equation (9) gives the electronic energy $E(R)$ and the wave function $\psi_e(r,R)$ for a particular value of R. Such separation of nuclear and electronic functions describes Born-Oppenheimer approximation, according to which the true wave functions of systems of moving electrons and nu will differ very slightly from those calculated assuming nuclei to be stationary.

The approximation holds good for ground state of molecules and may break down for excited states