SC1.203 :: Quiz-I

Time 40 Mins

6×5

1) Explain how it is possible to describe the *dynamics* of a particle with stationary states in the case of time-independent potentials.

2) Explain why the stationary states have definite energy.

3) Show that the separation constant E must be real for normalisable solutions.

4) In the harmonic oscillator problem, write the Schrödinger equation in terms of the raising and lowering operators.

5) What is the collapse of the wave function? Explain.

6) Prove that eigenvectors/eigenfunctions of a hermitian operator with different eigenvalues are orthogonal.