

Sessional Exam (2)

B.Sc V Semester

Sub:- Physics (H)

Paper: PHY-HC-5016

(Quantum Mechanics
& Applications)

Full marks = 20

Time - 1 hr

1x5=5

- Q.1 (a) what is a wave function?
(b) what do you mean by normalised wave function
(c) what is probability-current density?
(d) what is normalised wave function ψ ?
(e) Prove that $\psi\psi^*$ is always real.

3x5=15

Q.2 Derive Schrodinger's time dependent wave equation.

Q.3 What are operators? Define Linear and Hermitian operators with examples.

Q.4 Define a Hermitian operator? Prove that eigen value of such an operator are always real (or)

Q.5 Derive Schrodinger's time independent wave equation.