

PH3102 Quantum Mechanics Practice Problems

Instructor: Dr. Siddhartha Lal Autumn Semester, 2024

General Concepts (Uncertainty principles, Transformations, etc)

- Problem 19, 30; Ch 1; Sakurai
- Exercise 3.3; Ch 3; Zettili

Heisenberg and interaction pictures

- Problem 7; Ch 2; Sakurai
- Problem 5; Ch 3; Sakurai
- Exercise 10.4, 10.5; Ch 10; Zettili

Orbital and spin angular momentum

- Problem 3, 15, 18; Ch 3; Sakurai
- Exercises 7.6, 7.15, 7.32; Ch 7; Zettili
- Chapter- 9(Problem 9.40 , 9.42, 9.46 ; Liboff)
- Chapter-11(Problem 11.70,11.71,11.74,11.76, 11.82,11.83 ; Liboff)

Perturbation theory

- Exercises 9.2, 9.4, 9.14; Ch 9; Zettili
- Problems 9, 10, 11, 12; Ch 5; Sakurai
- Example 6.2; Problem 6.15, 6.16; Ch 6; Griffiths

Variational Principle

- Problem 7.4, 7.12, 7.15; Ch 7; Griffiths
- Exercise 9.16, 9.23. 9.27; Ch 9; Zettili

Books & Corresponding Edition

1. Modern Quantum Mechanics, Sakurai, Revised Edition, 1994
2. Quantum Mechanics, Zettili, Second Edition, 2009
3. Introduction to Quantum Mechanics, Griffiths, Second Edition
4. Introduction Quantum Mechanics , Richard .L.Liboff, 1st Edition