

Quantum Mechanics II: PHYS 314 (Spring 2021)

Quick quiz 8

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Instructions

These quick quizzes are low-stakes assessment tools to help cement your understanding of our material. They will help you remember the key facts and can serve as a study guide to help you focus on material you are less familiar with. These quizzes do not contribute to your grade and are for your own use.

1. **Without looking at your notes or the textbook, and without consulting with your neighbour**, write your answer to each question in the **first column**.
2. Discuss with your neighbour and use your notes or the textbook as needed to answer each question and write your answers to each question in the **second column**. You should complete the second column, but do not add anything to your first column.

There are five questions.

Question 1

What is an impact parameter and what does it mean?

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Question 2

Write down the relation between the scattering amplitude and the differential cross-section.

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Question 3

Explain in words what partial wave analysis is and why we use it.

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Question 4

Why can't we apply a partial wave analysis to a Coulomb's law scattering potential? What kind of potentials can we study using partial wave analysis?

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Question 5

What are Born approximations? How do they help us solve scattering problems?

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