

Review material for the Second Examination:

Again the exam will be taken from the problems in the text. I have listed the problems that I will use as the basis for the next exam.

The material for this exam is covered in chapters 16-19 (or 5-8 in Engel), with a little bit in chapter 15 (or Chapter 4 of Engel) especially the part that concerns time dependent phenomenon:

Chapter 15/4:

In chapter 4 review problem 4.15 and 4.25. For 4.25 show how to modify the wave function so that it is a proper wave function satisfying postulate 5 for all time.

W 15/4.6, and show that the average energy and the normalization cannot change with time regardless of how the wave function is constructed, for a wave function that satisfies postulate 5.

Chapter 16/5:

Questions 1,2, and 6

Problems 2 and 3.

Chapter 17/6:

Questions 1-5, 7, and 9

Problems: 1,2 ,3-9, 15, 17, 20

Chapter 18/7:

Questions 1,2,4-9. and 10 but it is a trick question (at least as it is written).

Problems: 1, 2, 3-10 (do not do any of these by integrating the actual functions; use the properties of the orbitals). 11, 13-17, 19, 22, 23, 24, 25, 28.

Chapter 19/8:

Questions: 2-5, 7-8.

Problems: 1-3, 5, 7, 10, 11, 13, 14, 16, 20, 22, 23 (do this derivation with the simpler equations in the supplements or the posted power point presentation, last two slides).