

EXAM 2 MATERIAL

Remember to bring a Scientific Calculator to the Exam

DATE: Friday, March 25, 2016

Test Questions and Problems are based upon: (a) assigned homework
(b) class examples
(c) class notes.

Chapter 3:

Only Multidimensional PIB (2D and 3D) including $\pi \rightarrow \pi^*$ Transitions
(Slides #69-#80)

Relevant HW: #7, #8

In addition, Exam 1, 2015: Problem #7 (both parts a and b) is based on this material

Portion of Test: Approximately 10-20%

Chapter 4:

All material covered in Lecture and assigned in Text, **EXCLUDING:**

1. Solution of the Rigid-Rotor Schrodinger Equation (Slides #32 - #35).
2. Verifying the a solution is an eigenfunction of the Hamiltonian, the L^2 operator and L_z operator (Slides #40, #41, #46)
3. Statistical Thermodynamics (Slides #68 - #85)

Relevant HW: All Except: #2, #8, #9

Portion of Test: Approximately 30-40%

Chapter 5 Material on next page

Chapter 5:

All material covered in Lecture and assigned in Text, **EXCLUDING**:

1. Solution of the Classical Harmonic Oscillator
(Part A: Slides #4 - #8)
2. Solution of the Harmonic Oscillator Schrodinger Equation
(Part A: Slides #17 - #25)
3. Two Dimensional Harmonic Oscillator (Part A: Slides #63 - #66)
4. Statistical Thermodynamics (Part B: Slides #55 - end)

In addition, we are **deferring** Perturbation Theory
(Part B: Slides #34 - #41). This material will be on the 3rd. test.

3. Statistical Thermodynamics: (Part B: Slides #55 - #87)

Relevant HW: All Except #3, #9, #10, #12

Portion of Test: Approximately 50-60%

Relevant Material from Exam 1 - 2015

Problem #7 (Multidimensional PIB and $\pi \rightarrow \pi^*$ Transitions)

Relevant Material from Exam 2 - 2015

All **EXCEPT** Prob. #5 (this is Perturbation Theory, which will be deferred until the 3rd. test)