

King Fahd University of Petroleum and Minerals
Physics Department
Phys-212: Modern Physics
Spring 2002

Assignment # 9

Date: Mon. Apr.22.2002

Due Date: Mon. Apr.29.2002

I encourage group discussion, but not copying (cheating).

Problem.1. Textbook Prob.7.1

Problem.2. Textbook Prob.7.4

Problem.3. Textbook Prob.7.9

Problem.4. Textbook Prob.7.10

Problem.5. Textbook Prob.7.13

Problem.6. Textbook Prob.7.23

Problem.7. How can the uncertainty principle be applied to the hydrogen atom?

Use the web site <http://www.pha.jhu.edu/~rt19/hydro/hydro.html>

Problem.8. Load and run the java applet with different values of n, l, and m in the web site

<http://www3.adnc.com/~topquark/quantum/hydrogenmain.html>

Write your observations.

Problem.9. The following web sites show plots for the radial wave-functions for the hydrogen atom. Also they show the probability density. Please visit them and write your observations.

<http://www.phy.davidson.edu/cabellf/Radial.html>

<http://www.phy.davidson.edu/cabellf/Density.html>