

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

Quiz # 3

Name:

ID#:

The radial part of a wave function for the hydrogen atom in the 1s state is given by

$$R(r) = A e^{-Zr/a_0}$$

- a. Find the normalization constant A.
- b. Find the value of $\langle r \rangle$.

You may use the standard integral: $\int_0^{\infty} x^n e^{-ax} dx = \frac{n!}{a^{n+1}}$