

Problem Set 9

Due date: December 12, 2007

Problem 32)

Calculate the average kinetic energy of a 2s electron in a hydrogenic atom of atomic number Z .
(4 points)

Problem 33)

What does the term symbol 3D_3 provide about the angular momentum of an atom?
(3 points)

Problem 34)

Give the possible term symbols for a (a) $V[Ar]3d^34s^2$ and a (b) $Te[Kr]4d^{10}5s^25p^4$.
(3 points)

Problem 35)

Which of the following transitions are allowed in the normal electronic emission spectrum of an atom?

a) $4d \rightarrow 1s$, b) $7p \rightarrow 5s$, c) $6p \rightarrow 4f$

(3 points)