

PHY 741 – Assignment #14

10/25/2017

Finish reading Chapter 15 of **Shankar**.

1. Evaluate the radial Coulomb integrals $\mathcal{R}^\lambda(2p, 2p; 2p, 2p)$ for $\lambda = 0, 2$ when the radial wavefunction has the form in terms of constants Z and a_0 .

$$R_{2p}(r) = \left(\frac{Z}{2a_0}\right)^{3/2} \frac{Zr}{\sqrt{3}a_0} e^{-Zr/(2a_0)}.$$