

Quantum Mechanics Fall 2003- Homework Set 6

Identical Particles and Addition of Angular Momentum

Due 5:00pm Monday November 3, 2003 in physics office or under my door.

- 4.35 On part (c), do only the $|11\rangle$ state.
- 4.36 This one is as easy as it seems, but cool.
- 4.37 Must use Clebsch-Gordon tables.
- 4.48 Measurement on Hydrogen ***
- 5.2 Various Bohr atom stuff.***
- 5.3 Normalizing Multi-particle state
- 5.6 Constructing 3-particle states
- 5.11 In part (b) and (e) don't worry about Nitrogen. In part (c) they are talking about ortho and para helium discussed earlier in the section. Note the S and D states are symmetric, the P state is anti-symmetric.
- 5.12 Be sure to take into account the little trick at $n=4$ at the bottom of page 190. Note check www.webelements.com after you have made your guess for the electronic structure and find you were wrong, but close.