

1) An atom has an outer shell configuration that is $2s^2 2p^4$. What term values do you expect from this configuration? (What atom is it, btw.?)

- (i) Give the possible J values for each term.
- (ii) Order the terms by their expected energies using Hund's rules.
- (iii) Compare the situation for a $2s^2 2p^2$ configuration.

2) Compute the two lowest and the (limiting) highest energy transitions in the Paschen series for hydrogen and deuterium.