

**Problem Set 5B**

1. Derive the term states for each of the following configurations and express them in the form  $^{(2S+1)}L_J$
- a)  $1s^2 2p^1$
  - b)  $1s^1 2p^1$
  - c)  $2p^1 3p^1$
  - d)  $2p^1 3d^1$
  - e)  $1s^2 2s^2 2p^6 3s^1 3p^1$
  - f)  $1s^2 2s^2 2p^6$