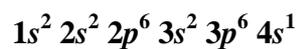


Marks
2

- Give the full electron configuration for the ground state K atom.



What are the three quantum numbers that describe the orbital that contains the electron furthest from the nucleus in the K atom?

$$n = 4$$

$$l = 0$$

$$m_l = 0$$

- Complete the following table, providing the ground state electron configuration for each of the following species.

3

Species	Ground state electron configuration
nitrogen atom	$1s^2 2s^2 2p^5$ or $[\text{He}] 2s^2 2p^3$
chloride ion	$1s^2 2s^2 2p^6 3s^2 3p^6$ or $[\text{Ne}] 3s^2 3p^6$
manganese(II) ion	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^0 3d^5$ or $[\text{Ar}] 4s^0 3d^5$

- Complete the following table, providing the ground state electron configuration for each of the following species.

3

Species	Ground state electron configuration
chlorine atom	$1s^2 2s^2 2p^6 3s^2 3p^5$
magnesium ion	$1s^2 2s^2 2p^6$
arsenic(V) ion	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^0 3d^{10}$