Electron Configuration

1. Which electron configuration represents the electrons of an atom in an excited state?

(a) 2-8-1 (b) 2-8-6 (c) 2-8-17-6 (d) 2-8-18-5

Ans.

2. Which electron configuration could represent a strontium atom in an excited state?

(a) 2-8-18-7-1 (b) 2-8-18-7-3 (c) 2-8-18-8-1 (d) 2-8-18-8-2

Ans.

3. Write one electron configuration for an atom of silicon in an excited state.

4. Write an electron configuration for an atom of aluminum in an excited state.

5. What is the electron configuration of a sulfur atom in the ground state?

6. Write out two possible excited state electron configurations for potassium.

a)

b)

7. Give the ground state electron configuration of the following atoms or ions. Use individual orbital populations to show the electron spin.

a) Si

b) S^{2-}

c) Na

d) Mg^{2+}

Electron Configuration

Answers

1. Which electron configuration represents the electrons of an atom in an excited state?

(a) 2-8-1 (b) 2-8-6 (c) 2-8-17-6 (d) 2-8-18-5

Ans. c

2. Which electron configuration could represent a strontium atom in an excited state?

(a) 2-8-18-7-1 (b) 2-8-18-7-3 (c) 2-8-18-8-1 (d) 2-8-18-8-2

Ans. b

3. Write one electron configuration for an atom of silicon in an excited state.

$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^1\ 4s^1$

4. Write an electron configuration for an atom of aluminum in an excited state.

$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^0\ 4s^1$

5. What is the electron configuration of a sulfur atom in the ground state?

$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$

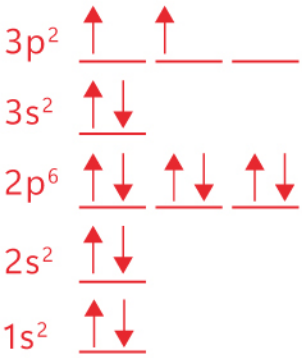
6. Write out two possible excited state electron configurations for potassium.

a) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5\ 4s^2$

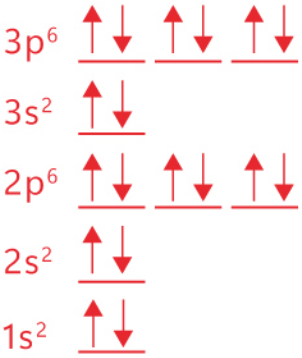
b) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^0\ 3d^1$

7. Give the ground state electron configuration of the following atoms or ions. Use individual orbital populations to show the electron spin.

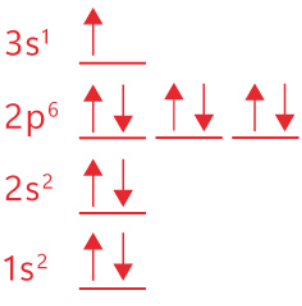
a) Si $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^2$



b) S^{2-} $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$



c) Na $1s^2\ 2s^2\ 2p^6\ 3s^1$



d) Mg^{2+} $1s^2\ 2s^2\ 2p^6$