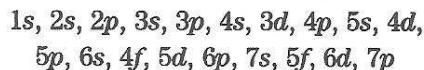


CHAPTER 13 REVIEW ACTIVITY

Text Reference: Section 13-10

Writing Electron Configurations

The filling order for electrons in energy sublevels is:



Each *s* sublevel contains 1 orbital; each *p* contains 3; each *d* contains 5; and each *f* contains 7. Each orbital can contain at most 2 electrons.

An electron configuration can be written out by assigning electrons to the sublevels in the order listed, until the number of electrons assigned equals the atomic number (*N*) of the atom.

Examples

Determine the configurations of these elements.

Beryllium (<i>N</i> = 4)	$1s^2 2s^2$
Aluminum (<i>N</i> = 13)	$1s^2 2s^2 2p^6 3s^2 3p^1$
Bromine (<i>N</i> = 35)	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$

STANDARD OR
FULL CONFIGURATION

Write the electron configuration for each of the following elements.

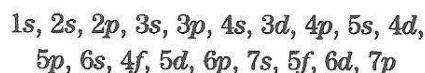
- | | |
|--------------------------------|---|
| 1. Calcium (<i>N</i> = 20) | 1. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$ |
| 2. Lithium (<i>N</i> = 3) | 2. $1s^2 2s^1$ |
| 3. Argon (<i>N</i> = 18) | 3. $1s^2 2s^2 2p^6 3s^2 3p^6$ |
| 4. Iron (<i>N</i> = 26) | 4. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$ |
| 5. Sodium (<i>N</i> = 11) | 5. $1s^2 2s^2 2p^6 3s^1$ |
| 6. Oxygen (<i>N</i> = 8) | 6. $1s^2 2s^2 2p^4$ |
| 7. Iodine (<i>N</i> = 53) | 7. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^5$ |
| 8. Dysprosium (<i>N</i> = 66) | 8. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{10}$ |
| 9. Radium (<i>N</i> = 88) | 9. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2$ |
| 10. Fermium (<i>N</i> = 100) | 10. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^{12}$ |

CHAPTER 13 REVIEW ACTIVITY

Text Reference: Section 13-10

Writing Electron Configurations

The filling order for electrons in energy sublevels is:



Each *s* sublevel contains 1 orbital; each *p* contains 3; each *d* contains 5; and each *f* contains 7. Each orbital can contain at most 2 electrons.

An electron configuration can be written out by assigning electrons to the sublevels in the order listed, until the number of electrons assigned equals the atomic number (*N*) of the atom.

Examples

Determine the configurations of these elements.

Beryllium (*N* = 4) $1s^2 2s^2$

Aluminum (*N* = 13) $1s^2 2s^2 2p^6 3s^2 3p^1$

Bromine (*N* = 35) $1s^2 2s^2 2p^6 3s^2 3p^4 4s^2 3d^{10} 4p^5$

NOBLE GAS OR
SHORTHAND CONFIGURATION

Write the electron configuration for each of the following elements.

- | | |
|--------------------------------|----------------------------------|
| 1. Calcium (<i>N</i> = 20) | 1. $[Ar]^{18} 4s^2$ |
| 2. Lithium (<i>N</i> = 3) | 2. $[He]^2 2s^1$ |
| 3. Argon (<i>N</i> = 18) | 3. $[Ar]^{18}$ |
| 4. Iron (<i>N</i> = 26) | 4. $[Ar]^{18} 4s^2 3d^6$ |
| 5. Sodium (<i>N</i> = 11) | 5. $[Ne]^{10} 3s^1$ |
| 6. Oxygen (<i>N</i> = 8) | 6. $[He]^2 2s^2 2p^4$ |
| 7. Iodine (<i>N</i> = 53) | 7. $[Kr]^{36} 5s^2 4d^{10} 5p^5$ |
| 8. Dysprosium (<i>N</i> = 66) | 8. $[Xe]^{54} 6s^2 4f^{10}$ |
| 9. Radium (<i>N</i> = 88) | 9. $[Rn]^{86} 7s^2$ |
| 10. Fermium (<i>N</i> = 100) | 10. $[Rn]^{86} 7s^2 5f^{12}$ |