

Electron Configurations Worksheet

Write the complete ground state electron configurations for the following:

- 1) lithium $1s^2 2s^1$
- 2) oxygen $1s^2 2s^2 2p^4$
- 3) calcium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$
- 4) titanium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^2$
- 5) rubidium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$
- 6) lead $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^2$
- 7) erbium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{12}$

Write the abbreviated ground state electron configurations for the following:

- 8) helium cannot be abbreviated !
- 9) nitrogen $[He] 2s^2 2p^3$
- 10) chlorine $[Ne] 3s^2 3p^5$
- 11) iron $[Ar] 4s^2 3d^6$
- 12) zinc $[Ar] 4s^2 3d^{10}$
- 13) barium $[Xe] 6s^2$
- 14) polonium $[Xe] 6s^2 4f^{14} 5d^{10} 6p^4$

Electron Configuration Practice Worksheet

In the space below, write the unabbreviated electron configurations of the following elements:

- 1) sodium $1s^2 2s^2 2p^6 3s^1$
- 2) iron $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$
- 3) bromine $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$
- 4) barium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2$
- 5) neptunium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^5$

In the space below, write the abbreviated electron configurations of the following elements:

- 6) cobalt $[Ar] 4s^2 3d^7$
- 7) silver $[Kr] 5s^2 4d^9$
- 8) tellurium $[Kr] 5s^2 4d^{10} 5p^4$
- 9) radium $[Rn] 7s^2$
- 10) lawrencium $[Rn] 7s^2 5f^{14} 6d^1$

Determine what elements are denoted by the following electron configurations:

- 11) $1s^2 2s^2 2p^6 3s^2 3p^4$ Sulfur
- 12) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ rubidium
- 13) $[Kr] 5s^2 4d^{10} 5p^3$ Antimony
- 14) $[Xe] 6s^2 4f^{14} 5d^6$ osmium
- 15) $[Rn] 7s^2 5f^{11}$ Einsteinium

Determine which of the following electron configurations are not valid:

- 16) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ 4d should be 3d
- 17) $1s^2 2s^2 2p^6 3s^3 3d^5$ 3p after 3s
- 18) $[Ra] 7s^2 5f^8$ Ra is not a noble gas & can't be used as an abbreviation
- 19) $[Kr] 5s^2 4d^{10} 5p^5$ valid
- 20) $[Xe]$ Xenon can't be its own abbreviation.

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