

## Electron Configurations - KEY

*Note: The electron configurations in this worksheet assume that lanthanum (La) is the first element in the 4f block and that actinium (Ac) is the first element in the 5f block. If your periodic table doesn't agree with this, your answers for elements near the f-orbitals may be slightly different (one more/less electron for the f-orbital).*

- 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  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^5$   
 also might be written (due to the close energy of d and f and similarities of elements versus predictable memorized config:  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 6d^1 5f^4$
- 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  $[Rn] 7s^2 5f^{14} 6d^1$   
 also might be written (due to the close energy of d and f and similarities of elements versus predictable memorized config:  $[Rn] 7s^2 6d^1 5f^{14}$
- 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 note: no d's, so the p. table referenced has Ac as 5f
- 16)  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$  not valid (take a look at "4d"; must be 3 d not 4!)
- 17)  $1s^2 2s^2 2p^6 3s^3 3d^5$  not valid (3p comes after 3s); also no 3 electrons in s
- 18)  $[Ra] 7s^2 5f^8$  not valid (radium isn't a noble gas)
- 19)  $[Kr] 5s^2 4d^{10} 5p^3$  valid
- 20)  $[Xe]$  not valid (an element can't be its own electron configuration)

# Electron Configuration Ws 1 Answer Key

**Patrick Vollmar**

A red circular graphic with a gradient, appearing as a semi-circle or a partial circle, located to the right of the author's name.

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