Key

Electron Configuration Evaluation

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 $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^4$

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] $7s^2 5f^{14}$

Determine what elements are denoted by the following electron configurations:

11) $1s^2 2s^2 2p^6 3s^2 3p^4$ S

12) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ Rb

13) [Kr] $5s^2 4d^{10} 5p^3$ As

14) [Xe] $6s^2 4f^{14} 5d^6$ Os

15) [Rn] $7s^2 6d^1 5f^{11}$ Fm

Determine which of the following electron configurations are not valid:

16) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ Br

17) $1s^2 2s^2 2p^6 3s^3 3d^5$ Mn

18) [Ra] $7s^2 5f^8$ Bk

19) [Kr] $5s^2 4d^{10} 5p^5$ I

20) [Xe] Xe