Name_____Date_____Period_____

Electron Configuration Practice Worksheet

In the space below, write the <u>unabbreviated</u> electron configurations of the following elements:

1) oxygen _____

2) sodium _____

3) iron _____

4) bromine _____

5) barium _____

6) nitrogen _____

7) chlorine _____

8) argon _____

In the space below, write the <u>abbreviated</u> electron configurations of the following elements:

9) cobalt _____

10) silver _____

11) tellurium _____

12) iodine _____

13) cesium _____

Determine what elements are denoted by the following electron configurations:

14) $1s^2 2s^2 2p^6 3s^2 3p^4$ _____

15) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ _____

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

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

18) [Xe] $6s^2$ _____

These electron configurations are NOT valid, determine what is wrong with them:

19) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ _____

20) $1s^2 2s^2 2p^6 3s^2 3d^5$ _____

21) [Ra] $7s^2 5f^8$ _____

22) [Xe] _____

Name_____Date_____Period_____

Electron Configurations - Solutions

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.

1) oxygen **$1s^2 2s^2 2p^4$**

2) sodium **$1s^2 2s^2 2p^6 3s^1$**

3) iron **$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$**

4) bromine **$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$**

5) barium **$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2$**

6) nitrogen **$1s^2 2s^2 2p^3$**

7) chorine **$1s^2 2s^2 2p^6 3s^2 3p^5$**

8) argon **$1s^2 2s^2 2p^6 3s^2 3p^6$**

9) cobalt **[Ar] $4s^2 3d^7$**

10) silver **[Kr] $5s^2 4d^9$**

11) tellurium **[Kr] $5s^2 4d^{10} 5p^4$**

12) iodine **[Kr] $5s^2 4d^{10} 5p^5$**

13) cesium **[Xe] $6s^1$**

14) $1s^2 2s^2 2p^6 3s^2 3p^4$ **sulfur**

15) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ **rubidium**

16) [Kr] $5s^2 4d^{10} 5p^3$ **antimony**

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

18) [Xe] $6s^2$ **barium**

These electron configurations have mistakes, determine what is wrong.

19) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ **not valid (take a look at "4d")**

20) $1s^2 2s^2 2p^6 3s^2 3d^5$ **not valid (3p comes after 3s)**

21) [Ra] $7s^2 5f^8$ **not valid (radium isn't a noble gas)**

22) [Xe] **not valid (an element can't be its own electron configuration)**