

Chemistry 1020
Electron configurations worksheet

Write the full electron configurations for the following neutral atoms:

1. Ne $1s^2 2s^2 2p^6$
2. Co $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^7$
3. P $1s^2 2s^2 2p^6 3s^2 3p^3$
4. C $1s^2 2s^2 2p^2$
5. Se $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^4$
6. Ag $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^9$

Write the full electron configuration for the following ions and indicate whether the ions are stable or unstable.

7. Be^+ $1s^2 2s^1$ Not a full valence shell = unstable ion
8. Be^{2+} $1s^2 = [\text{He}] = \text{stable ion}$
9. O^{2+} $1s^2 2s^2 2p^2 = \text{unstable ion}$
10. O^{2-} $1s^2 2s^2 2p^6 = [\text{Ne}] = \text{stable ion}$
11. Al^{3+} $1s^2 2s^2 2p^6 = [\text{Ne}] = \text{stable ion}$
12. Al^{3-} $1s^2 2s^2 2p^6 3s^2 3p^4 = \text{unstable ion}$
13. K^+ $1s^2 2s^2 2p^6 3s^2 3p^6 = [\text{Ar}] = \text{stable ion}$
14. K^- $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 = \text{unstable ion}$

Write the abbreviated electron configuration for the following atoms or ions. For the ions, indicate if it is a stable or unstable ion.

