

Chemistry I

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Electron Configuration

Name _____

Date _____ Period _____

- The correct sequence in ascending energies of atomic sublevels is
 - 4d, 5s, 5p, 6s;
 - 5s, 4d, 5p, 6s;
 - 5s, 4d, 6s, 5p;
 - 5s, 5p, 4d, 6s;
 - 1f, 2d, 3p, 4s.
- The statement that an electron occupies the lowest energy orbital that can receive it is
 - Hund's rule.
 - the Aufbau principle.
 - Bohr's law.
 - the Pauli exclusion principle.
 - the uncertainty principle.
- In the correct electron-dot notation for the phosphorus atom (atomic number 15), the symbol P is surrounded by
 - two pairs of dots and a single dot.
 - three pairs of dots and a single dot.
 - one pair of dots and three single dots.
 - two pairs of dots.
 - four pairs of dots.
- The electron-configuration notation for scandium (atomic number 21) would show the **three** highest energy electrons to have the notation
 - $3d^1 4s^2$
 - $4s^2$
 - $3d^3$
 - $4s^2 4p^1$
- The element with the electron-configuration notation $1s^2 2s^2 2p^6 3s^2 3p^6$ is
 - Mg (z=12)
 - P (z=15)
 - S (z=16)
 - Si (z=14)
 - Ar (z=18)
- in the correct electron-dot notation for sulfur (atomic number 16), the symbol S is surrounded by
 - three pairs of dots;
 - two pairs of dots and two single dots;
 - four single dots;
 - two pairs of dots.
 - four pairs of dots.
- if the highest main energy level of an atom has the s and p orbitals filled with electrons, it is said to have a(n)
 - electron pair;
 - octet;
 - ellipsoid;
 - circle.
- The noble gas configuration is an outer main energy level fully occupied by
 - 32 electrons;
 - 8 electrons;
 - 2 electrons;
 - 64 electrons.

9. The atomic sublevel with the next highest energy after $4p$ is
- $5p$
 - $4d$
 - $3s$
 - $5s$
 - $5f$
10. "Orbitals of equal energy are each occupied by one electron before any is occupied by a second electron" is a statement of
- aufbau principle
 - hund's rule
 - Einstein's Photoelectric Effect
 - Heisenburg's Uncertainty Principle
 - Pauli Exclusion Principle
11. Which electron configuration is IMPOSSIBLE
- $1s^2 2s^2 2p^6 3s^2$
 - $1s^2 2s^2 2p^6 2d^2$
 - $1s^2 2s^2 2p^6 3s^2 3p^6$
 - $1s^2 2s^2 2p^5$
 - $1s^2 2s^1$
12. The electron configuration for the carbon atom (C) is $1s^2 2s^2 2p^2$. The atomic number of carbon is
- 6
 - 12
 - 2
 - 8
 - 0
13. The number of un-paired electrons in an oxygen atom is
- 8
 - 16
 - 2
 - 4
 - 0
14. What is the correct orbital notation of Li?
- (a) $\uparrow \uparrow \uparrow$ (b) $\uparrow\downarrow \uparrow\downarrow \uparrow\downarrow$ (c) $\uparrow\downarrow \uparrow$ (d) $\uparrow \uparrow\downarrow$ (e) $\downarrow \uparrow \downarrow$
15. An element with eight electrons in its outermost main energy level is called a(n)
- stable element
 - noble gas
 - un-reactive element
 - all of these
 - none of these