



4. John Dalton

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**Mlib 76 0063**

02:07, general, multiple choice, > 1 min, fixed.

**006**

Mendeleev organized the elements

1. by increasing atomic weight and similar properties.

2. by increasing atomic number and similar properties.

3. alphabetically by name.

4. by number of electrons.

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**Msci 04 0156**

02:07, general, multiple choice, > 1 min, fixed.

**007**

With respect to location in the periodic table, metals are on the (left, right), nonmetals on the (left, right) and the two are separated by the (alkaline earths, halogens, metalloids).

1. right; left; alkaline earths

2. left; right; halogens

3. right; left; metalloids

4. left; right; metalloids

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**Mlib 76 0047**

02:10, general, multiple choice, > 1 min, fixed.

**008**

The anion formed when nitrogen gains three electrons is called the

1. nitride ion.

2. nitrite ion.

3. nitride ion.

4. nitro ion.

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**Brodbelt 50045**

02:09, general, multiple choice, < 1 min, fixed.

**009**

Which of the following species has the greatest number of electrons?

1.  $\text{Si}^{2+}$

2.  $\text{Na}^-$

3.  $\text{Na}^+$

4. Mg

5.  $\text{P}^{3+}$

6.  $\text{Al}^+$

7.  $\text{Al}^{2+}$

8.  $\text{Mg}^-$

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**Brodbelt 50048**

02:09, general, multiple choice, < 1 min, fixed.

**010**

How many protons and electrons are present in the  $\text{Mg}^{2+}$  ion?

1. 12 protons, 10 electrons

2. 12 protons, 12 electrons

3. 12 protons, 14 electrons

4. 10 protons, 10 electrons

5. 10 protons, 12 electrons

6. 10 protons, 14 electrons

7. 14 protons, 14 electrons

8. 14 protons, 12 electrons

9. 14 protons, 10 electrons

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**Mlib 76 1008**

02:09, general, multiple choice, > 1 min, fixed.

**011**

The number of protons in a chloride ion ( $\text{Cl}^-$ ) is

1. 17.
2. 16.
3. 18.
4. 35.

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**ChemPrin3e T01 44**

08:12, general, multiple choice, < 1 min, fixed.

**012**

Write the ground-state electron configuration of a lead atom.

1.  $[\text{Xe}] 4f^{14} 5d^5 6s^1 6p^6 7s^2$
2.  $[\text{Xe}] 4f^{14} 5d^{10} 6s^2 6p^2$
3.  $[\text{Xe}] 4f^{14} 5d^{10} 6s^1 6p^3$
4.  $[\text{Xe}] 4f^{14} 5d^{10} 6p^4$
5.  $[\text{Xe}] 4f^{14} 5d^9 6s^2 6p^3$

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**Mlib 02 4075**

08:12, general, multiple choice, > 1 min, fixed.

**013**

Write the electron configuration for Mo.

1.  $[\text{Kr}] 5s^2 4d^4$
2.  $[\text{Kr}] 5s^1 4d^5$
3.  $[\text{Kr}] 5p^6 4d^{10}$
4.  $[\text{Kr}] 4d^6$

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**Msci 05 1635**

08:12, general, multiple choice, > 1 min, fixed.

**014**

What is the electronic configuration of tellurium (Te)?

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

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

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

4.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^4$

5.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4p^6 5s^2 4d^{10} 5p^8 6s^2 5d^6$

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**Mlib 03 5071**

02:07, general, multiple choice, > 1 min, fixed.

**015**

Which of the following elements would be expected to resemble silicon (Si) most closely in chemical properties?

1. aluminum (Al)
2. sulfur (S)
3. arsenic (As)
4. germanium (Ge)
5. bromine (Br)

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**Msci 05 1653**

08:12, general, multiple choice, > 1 min, fixed.

**016**

What is the electronic configuration of yttrium (symbol Y)?

1.  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 5s^3$

2.  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 5s^2 5p^1$

3.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4p^6 3d^{10} 3f^3$

4.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^1$

5.  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d^3$

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**Mlib 03 6007**

09:01, general, multiple choice, > 1 min, fixed.

**017**

In general, atomic size tends to increase

1. from top to bottom and from left to right on the periodic table.
2. from top to bottom and from right to left on the periodic table.
3. from bottom to top and from right to left on the periodic table.
4. from bottom to top and from left to right on the periodic table.
5. There is no relationship between the size of an atom and its position on the periodic table.

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**DAL 006 0004**

09:01, general, multiple choice, < 1 min, fixed.

**018**

Rank the following atoms in terms of decreasing atomic radius.

1. Na, Mg, N, O, F
2. F, O, N, Mg, Na
3. F, Mg, Na, O, N
4. F, O, N, Na, Mg
5. Na, N, O, Mg, F

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**Msci 02 1148**

09:01, general, multiple choice, > 1 min, fixed.

**019**

The oxygen atom is smaller than the sulfur atom because

1. the outer electrons of oxygen are more effectively screened from the nuclear charge than are sulfur's outer electrons.
2. the outer electrons of oxygen are less effectively screened from the nuclear charge

than are sulfur's outer electrons.

3. the outer orbitals of oxygen are located farther away from the nucleus than those of sulfur.
4. the outer orbitals of oxygen are located closer to the nucleus than those of sulfur.
5. False; the oxygen atom is larger than the sulfur atom.

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**Brodbelt 06 04**

09:03, general, multiple choice, > 1 min, fixed.

**020**

Fluorine has a higher ionization energy than oxygen because

1. the outer orbitals of fluorine are located further from the nucleus than the outer orbitals of oxygen.
2. the effective nuclear charge of fluorine is greater than that of oxygen.
3. the outer orbitals of oxygen are located closer to the nucleus than the outer orbitals of fluorine.
4. the effective nuclear charge of oxygen is greater than that of fluorine.
5. False; oxygen has a greater ionization energy than fluorine.

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**Brodbelt 013 206**

09:03, general, multiple choice, < 1 min, fixed.

**021**

As an atom's radius decreases,

1. its ionization energy increases.
2. its ionization energy decreases.
3. its ionization energy increases or decreases depending on whether you are going up a column or across a row.

4. its ionization energy does not change.

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**ChemPrin3e 01 77**

09:03, general, multiple choice, < 1 min, wording-variable.

**022**

What is the order of decreasing ionization energy?

1. oxygen, selenium, tellurium
2. oxygen, tellurium, selenium
3. tellurium, oxygen, selenium
4. selenium, tellurium, oxygen
5. selenium, oxygen, tellurium
6. tellurium, selenium, oxygen

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**Brodbelt 013 203**

09:50, general, multiple choice, < 1 min, fixed.

**023**

Which of the following statements is true?

1. Electronegativity is a measure of the tendency of an atom to lose electrons.
2. When ionization energy increases, electronegativity increases.
3. Electron affinity is a measure of the amount of energy needed to remove an electron from an atom.
4. As electron affinity increases (becomes increasingly negative), electronegativity decreases.
5. Ionic radii are always larger than atomic radii for the same element.

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**ChemPrin3e 02 62**

09:05, general, multiple choice, < 1 min, fixed.

**024**

What is the correct order of *increasing* electronegativity?

1. Si, P, S, C, N, O, F

2. F, O, N, C, S, P, Si

3. O, C, N, S, P, Si, F

4. F, Si, P, S, N, C, O

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**Msci 03 0914**

09:05, general, multiple choice, > 1 min, fixed.

**025**

What is the proper order of electronegativity?

1.  $\text{Ca} > \text{Be} > \text{C} > \text{N}$

2.  $\text{Ca} < \text{Be} < \text{C} < \text{N}$

3.  $\text{Ca} > \text{Be} > \text{N} > \text{C}$

4.  $\text{Ca} < \text{Be} < \text{N} < \text{C}$

5.  $\text{Be} > \text{Ca} < \text{N} < \text{C}$