Assessment

Chemistry: Lesson 4

Question 1

You can divide calcium atoms and still get calcium.

A. True

B. False

Question 2

In a chemical reaction, matter is neither created nor destroyed.

A. True

B. False

Question 3

Which of the following is an example of the Law of Multiple Proportions?

A. A sample of chlorine is found to contain three times as much Cl-35 as Cl-37.

B. Two different compounds formed from carbon and oxygen have the following mass ratios: 1.33 g O:1 g C and 2.66 g O:1 g C.

C. Two different samples of table salt are found to have the same ratio of sodium to chlorine .

D. The atomic mass of bromine is found to be 79.90 amu.

Question 4

The charge on an electron was discovered by:

A. Dalton

B. Democritus

C. Lavoisier.

D. Millikan .

Question 5

The mass of the proton is almost identical to the mass of the neutron.

A. True

B. False

Question 6

The total mass of an atom comes almost entirely from:

A. protons and electrons

B. protons and neutrons

C. neutrons and electrons

D. only protons.

Question 7

Which is true about electrons?

A. They have a positive charge.

B. They are in the nucleus.

C. They have a mass of 1 amu.

D. They are outside the nucleus.

Question 8

All atoms of a given element have the same number of protons.

A. True

B. False

Question 9

All atoms of a given element have the same number of neutrons.

A. True

B. False

Question 10

The mass number is equal to:

A. number of electrons + number of protons

B. number of electrons – number of protons

C. number of electrons + number of neutrons

D. number of protons + number of neutrons.

Assessment

Chemistry: Lesson 5

Question 1

The symbol for sodium is:

A. S

B. So

C. N

D. Na

Question 2

Metals are good conductors of heat and electricity.

A. True

B. False

Question 3

The number that is a decimal average is the:

A. atomic number

B. atomic mass

C. mass number

D. ion charge.

Question 4

In the Periodic Table, elements within the same family (group) have similar properties.

A. True

B. False

Question 5

Which of the following is a cation?

A. 1+ charge

B. 1– charge

C. 0 charge

D. 2– charge

Question 6

Metals are found on the right side of the Periodic Table.

A. True

B. False

Question 7

Which of the following is correct for an anion?

A. Fe^{2+}

B. S^{2-}

C. S^{2-}

D. Al^{3}

Question 8

The Periodic Table grew out of the work of:

A. Dalton

B. Lavoisier

C. Millikan

D. Mendeleev.

Question 9

If the atomic number and the mass number are not the same, the smaller one is the mass number.

A. True

B. False

Question 10

The atomic mass is the average of the isotopes' masses.

A. True

B. False

Assessment

Chemistry: Lesson 6

Question 1

One mole of gold (MM = 197) has the same mass as one mole of carbon (MM = 12).

A. True

B. False

Question 2

Potassium's atomic number is 19 and its atomic mass is 39.1 amu, so its molar mass (in g/mole) is:

A. 19

B. 20.1

C. 39.1

D. 58.1

Question 3

Element X has a molar mass of 30, and element Y has a molar mass of 50. Which has the greater number of moles?

A. 30 g of X

B. 50 g of X XXXXX

C. 30 g of Y

D. 50 g of Y

Question 4

160 g of an element with a molar mass of 40 g/mole = __ moles?

A. 0.25

B. 4

C. 120

D. 200

Question 5

If 50 g of one element = 2.5 moles, then 50 g of every element = 2.5 moles.

A. True

B. False

Question 6

Sodium has a molar mass of 23.0 g/mol, and lead has a molar mass of 207.2 g/mol, so 3.5 moles of sodium has the same number of atoms as 3.5 moles of lead.

A. True

B. False XXXX

Question 7

Which of the following has the highest number of atoms in a 100 g sample?

A. Copper with a molar mass of 63.5 g/mol

B. Calcium with a molar mass of 40.1 g/mol

C. Aluminum with a molar mass of 27.0 g/mol

D. Sodium with a molar mass of 23.0 g/mol

Question 8

Element A has an atomic mass of 80 g/mol, and element B has an atomic mass of 20 g/mol, so 80 g of A:

A. has more moles than 80 g of B

B. has more atoms than 80 g of B

C. has fewer moles than 80 g of B

D. has the same number of moles as 80 g of B.

Question 9

An actual mass of 120 g of an element whose molar mass is 40 g/mol would be ___ atoms?

A. 2.007 ? 1023

B. 1.8066 ? 1023

C. 2.007 ? 1024

D. 1.8066 ? 1024

Question 10

There are 4 moles of an element in a sample weighing 92 g. The element is most likely:

A. sodium with a molar mass of 23.0

B. magnesium with a molar mass of 24.3

C. carbon with a molar mass of 12.0

D. sulfur with a molar mass of 32.1.

Assessment

Chemistry: Lesson 7

Question 1

What are the possible orbitals for n = 3?

A. s, p, d

B. s, p, d, f

C. S

D. s, p

Question 2

How many orbitals are contained in the third principal level (n = 3) of a given atom?

A. 9

B. 3

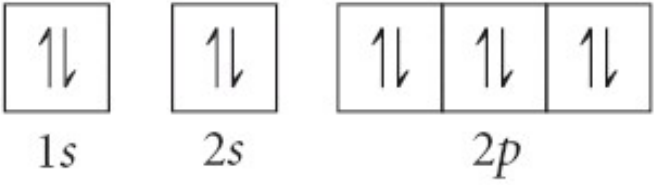
C. 18

D. 7

E. 5

Question 3

The orbital diagram that represents the ground state of N is



A. True

B. False

Question 4

Which statement is correct about orbital?

A. An orbital can have maximum two electrons.

B. A p orbital can have six electrons.

C. An s orbital has no shape.

D. All p orbitals have same orientation.

E. Both A and B

Question 5

No two electrons in an atom can have the same four quantum number is known as

A. Pauli exclusion principle.

B. Hund's rule.

C. Aufbau principle.

D. Heisenberg uncertainty principle.

Question 6

When filling degenerate orbitals, electrons fill them singly at first, with parallel spins. This is known as:

A. Aufbau principle.

B. Heisenberg uncertainty principle.

C. Hund's rule.

D. Pauli exclusion principle.

Question 7

Give the complete electronic configuration for Mn.

A. 1s2 2s2 2p6 3s2 3p6 4s2 4d5

B. 1s2 2s2 2p6 3s2 3p6 4s1 3d6

C. 1s2 2s2 2p6 3s2 3p6 4s2 3d5

D. 1s2 2s2 2p6 3s2 3p6 4s2 4p5

Question 8

By using the noble gas notation, we can write the (ground state) electron configuration for Se as:

A. [Ar] 4s2 3d10 4p4

B. [Ar] 4s2 4d10 4p4

C. [Ar] 4s2 3d10 4p6

D. [Ar] 4s2 3d10

E. [Ar] 3d10 4p4

Question 9

Identify the number of valence electrons for Mg.

A. 8

B. 7

C. 5

D. 2

Question 10

How many valence electrons does an atom of S have?

A. 3

B. 1

C. 2

D. 4

E. 6

Assessment

Chemistry: Lesson 8

Question 1

Place the following elements in order of increasing atomic radius:
P Mg Cl

A. Mg < P < Cl

B. P < Cl < Mg

C. Cl < P < Mg

D. Cl < Mg < P

E. Mg < Cl < P

Question 2

Place the following elements in order of decreasing atomic radius:
Xe Kr Ar

A. Ar > Xe > Kr

B. Xe > Kr > Ar

C. Ar > Kr > Xe

D. Kr > Xe > Ar

E. Kr > Ar > Xe

Question 3

Of the following, which atom has the largest atomic radius?

A. Rb

B. I

Question 4

Ionization energy is the energy required to remove an electron from the atom or ion in the gaseous state.

A. True

B. False

Question 5

Which reaction below represents the first ionization of O?

A. $O^{+}\ (g) + e^{-} \rightarrow O(g)$

B. $O(g) + e^{-} \rightarrow O^{-}\ (g)$

C. $O^{-}\ (g) \rightarrow O(g) + e^{-}$

D. $O(g) \rightarrow O^{+}\ (g) + e^{-}$

E. $O^{-}\ (g) + e^{-} \rightarrow O2^{-}\ (g)$

Question 6

Which reaction below represents the second ionization of Sr?

A. $Sr(g) \rightarrow Sr^{+}(g) + e^{-}$

B. $Sr2^{+}(g) + e^{-} \rightarrow Sr^{+}(g)$

C. $Sr^{+}(g) + e^{-} \rightarrow Sr(g)$

D. $Sr^{-}(g) + e^{-} \rightarrow Sr2^{-}(g)$

E. $Sr^{+}(g) \rightarrow Sr2^{+}(g) + e^{-}$

Question 7

Of the following, which element has the highest first ionization energy?

A. Al

B. Cl

C. Na

D. P

Question 8

Electron affinity is the energy associated with the gaining of an electron by the atom in the gaseous state.

A. True

B. False

Question 9

Place the following in order of decreasing metallic character:
P Cl Mg

A. P > Cl > Mg

B. Cl > P > Mg

C. Mg > P > Cl

D. Cl > Mg > P

E. Mg > Cl > P

Question 10

Place the following in order of increasing metallic character:
As P Sb

A. As < Sb < P

B. Sb < As < P

C. P < As < Sb

D. P < Sb < As

E. As < P < Sb