

Deep Run High School

CHEMISTRY I: 3(A), 5(A), 7(A)

Unit 4 Quiz

Due Date: November 20, 2019

Instructors: Jennifer Krug, Mr. Wilson, Mrs. Tique

ID: 2233

Name: _____

Score: / 100

Instructions:

This quiz contains 25 total questions - 23 random questions from Unit 4 Periodic Trends, 1 question about significant figures, and 1 question about accuracy and precision. You will have **40 minutes** to complete this assessment.

Question 1

 /1

How many significant digits are in the measurement 40400 g?

☐ 2☐ 4☐ 3☐ 5

Question 2

 /1

Which properties are most common in nonmetal atoms?

☐ high ionization energy and high electronegativity☐ low ionization energy and high electronegativity☐ high ionization energy and low electronegativity☐ low ionization energy and low electronegativity

Name: _____

Question 3

 /1

All of the following are properties of metals *EXCEPT* -

- ☐ lustrous
- ☐ electrical conductivity
- ☐ malleable
- ☐ low melting points

Question 4

 /1

As elements in Group 14 are considered top to bottom, their
Metallic Properties -

- ☐ stay the same
- ☐ decrease
- ☐ increase

Name: _____

Question 5

/1

Which chemist organized the modern periodic table, which is based on the atomic number of elements?

- ☐ Henry Moseley
- ☐ Neils Bohr
- ☐ Dmitri Mendeleev
- ☐ Ernest Rutherford

Question 6

/1

Compared to the size of a Chlorine (Cl) atom , a Sulfur (S) atom would have –

- ☐ double the atomic radius
- ☐ a smaller atomic radius
- ☐ one half the atomic radius
- ☐ a larger atomic radius

Name: _____

Question 7

 /1**Which of these elements has the smallest atomic radius?**

- ☐ Sulfur (S)
- ☐ Oxygen (O)
- ☐ Sodium (Na)
- ☐ Beryllium (Be)

Question 8

 /1**Which of the following causes the atomic radii to get smaller as you move left to right across the periodic table?**

- ☐ Electromagnetic Force
- ☐ Electron-electron repulsion
- ☐ Shielding Effect
- ☐ Radioactivity of the nucleus

Name: _____

Question 9

 /1

Which of the following atoms exhibits the largest shielding effect?

☐ Barium (Ba)☐ Calcium (Ca)☐ Iron (Fe)☐ Oxygen (O)

Question 10

 /1

Compared to the amount of shielding in a Fluorine (F) atom, a Nitrogen (N) atom would have –

☐ the same amount of shielding☐ less shielding☐ more shielding

Name: _____

Question 11

 /1

**All of the following trends increase as shielding increases
EXCEPT –**

- ☐ Ionization Energy
- ☐ Ionic Radii
- ☐ Metallic Properties
- ☐ Atomic Radii

Question 12

 /1

**Which chemist organized the first periodic table based on
average atomic mass?**

- ☐ Henry Moseley
- ☐ Neils Bohr
- ☐ Dmitri Mendeleev
- ☐ Ernest Rutherford

Name: _____

Question 13

 /1

As you go from left to right across the periodic table,

- ☐ electronegativity increases and atomic radius increases.
- ☐ electronegativity decreases and atomic radius increases.
- ☐ electronegativity increases and atomic radius decreases.
- ☐ electronegativity decreases and atomic radius decreases.

Question 14

 /1

Which of these elements has the least attraction for electrons in a chemical bond?

- ☐ Argon (Ar)
- ☐ Aluminum (Al)
- ☐ Sulfur (S)
- ☐ Magnesium (Mg)

Name: _____

Question 15

 /1

Which periodic trend is a measure of the tendency of an atom to attract a bonding pair of electrons?

- ☐ Ionic Radii
- ☐ Shielding
- ☐ Ionization Energy
- ☐ Electronegativity

Question 25

 /1

Which sequence of elements is arranged in order of decreasing ionization energy?

- ☐ Ar, Ne, He
- ☐ Be, Mg, Ca
- ☐ Br, Cl, F
- ☐ Na, Si, Cl

Name: _____

Question 16

 /1

The density of a metal was calculated three separate times and recorded below:

Trial # Concentration of HCl

1 5.23 g/ml

2 4.96 g/ml

3 6.99 g/ml

The actual expected density was 5.00 g/ml. The results were

☐ neither accurate nor precise

☐ both accurate and precise

☐ accurate but not precise

☐ precise but not accurate

Question 17

 /1

Which anion will have the largest radius?

☐ N⁻³

☐ S⁻²

☐ O⁻²

☐ Cl⁻¹

Name: _____

Question 18

/1

All of the following are true of ionic radii *EXCEPT* -

- ☐ The shielding effect increases for ionic radii as you move down a group.
- ☐ Nonmetals get larger when they become anions.
- ☐ Metals get smaller when they become cations.
- ☐ Nobel gases form the largest ions.

Question 19

/1

Which of the following is true of the Ionic Radii trend?

- ☐ Cations are always smaller than anions.
- ☐ Nonmetals get smaller when they become anions.
- ☐ Metals get smaller when they become cations.
- ☐ Nobel gases form the largest ions.

Name: _____

Question 20

 /1**Which combination of atoms will form a covalent bond?**

- ☐ Fr and F
- ☐ Cu and Zn
- ☐ H and O
- ☐ Na and Cl

Question 21

 /1**Which of the following elements has a full octet?**

- ☐ Ne
- ☐ Al
- ☐ Fe
- ☐ Ca

Name: _____

Question 22

 /1

Which subatomic particle is responsible for determining an elements chemical properties?

- ☐ ions
- ☐ neutrons
- ☐ electrons
- ☐ protons

Question 23

 /1

When moving from left to right across the periodic table, ionization energy...

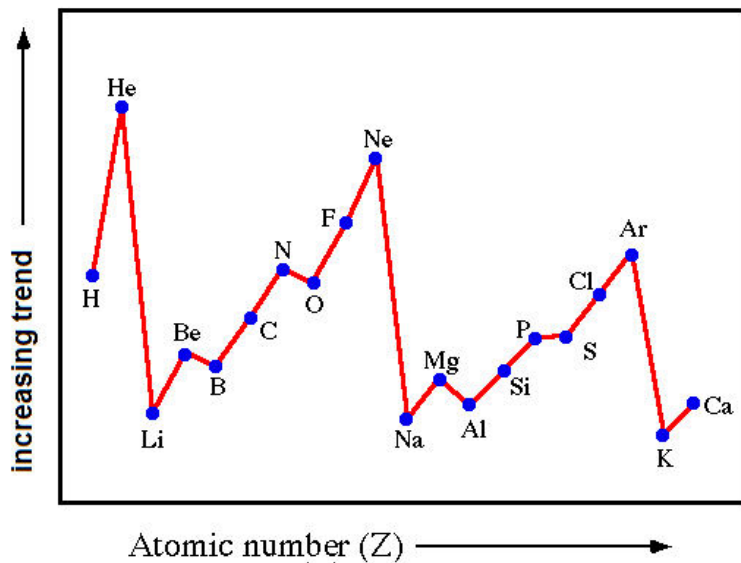
- ☐ none of the above.
- ☐ increases due to increased electromagnetic attraction.
- ☐ increases due to increased electron-electron repulsion.
- ☐ increases due to increased shielding.

Name: _____

Question 24

/1

The diagram below represents the periodic trend for _____.



- ☐ Atomic Radii
- ☐ Electronegativity
- ☐ Metallic Properties
- ☐ Ionization Energy

Name: _____

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Instructions for grading: Grade each question and tally the score to obtain the total test points. If the factor does not equal 1, multiply the total points by the factor to obtain the student's final score.

Question 1

How many significant digits are in the measurement 40400 g?



3

1 possible pts.

Question 2

Which properties are most common in nonmetal atoms?



high ionization energy and high electronegativity

1 possible pts.

Question 3

All of the following are properties of metals *EXCEPT* -



low melting points

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 4

As elements in Group 14 are considered top to bottom, their Metallic Properties -



increase

1 possible pts.

Question 5

Which chemist organized the modern periodic table, which is based on the atomic number of elements?



Henry Moseley

1 possible pts.

Question 6

Compared to the size of a Chlorine (Cl) atom , a Sulfur (S) atom would have -



a larger atomic radius

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 7

Which of these elements has the smallest atomic radius?



Oxygen (O)

1 possible pts.

Question 8

Which of the following causes the atomic radii to get smaller as you move left to right across the periodic table?



Electromagnetic Force

1 possible pts.

Question 9

Which of the following atoms exhibits the largest shielding effect?



Barium (Ba)

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 10

Compared to the amount of shielding in a Fluorine (F) atom, a Nitrogen (N) atom would have –



the same amount of shielding

1 possible pts.

Question 11

All of the following trends increase as shielding increases *EXCEPT* –



Ionization Energy

1 possible pts.

Question 12

Which chemist organized the first periodic table based on average atomic mass?



Dmitri Mendeleev

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 13

As you go from left to right across the periodic table,



electronegativity increases and atomic radius decreases.

1 possible pts.

Question 14

Which of these elements has the least attraction for electrons in a chemical bond?



Argon (Ar)

1 possible pts.

Question 15

Which periodic trend is a measure of the tendency of an atom to attract a bonding pair of electrons?



Electronegativity

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 16

The density of a metal was calculated three separate times and recorded below:

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The actual expected density was 5.00 g/ml. The results were



neither accurate nor precise

1 possible pts.

Question 17

Which anion will have the largest radius?



S⁻²

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 18

All of the following are true of ionic radii *EXCEPT* -



Nobel gases form the largest ions.

1 possible pts.

Question 19

Which of the following is true of the Ionic Radii trend?



Metals get smaller when they become cations.

1 possible pts.

Question 20

Which combination of atoms will form a covalent bond?



H and O

1 possible pts.

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Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 21

Which of the following elements has a full octet?



Ne

1 possible pts.

Question 22

Which subatomic particle is responsible for determining an elements chemical properties?



electrons

1 possible pts.

Question 23

When moving from left to right across the periodic table, ionization energy...



increases due to increased electromagnetic attraction.

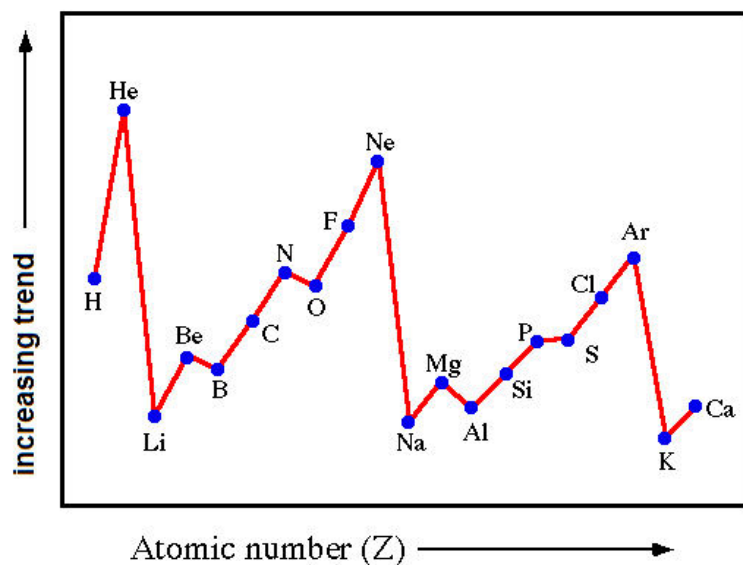
1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 24

The diagram below represents the periodic trend for _____.



Ionization Energy

1 possible pts.

Answer Key

Possible Points: 25 Factor: x4.00 Test Value: 100

Question 25

Which sequence of elements is arranged in order of decreasing ionization energy?



Be, Mg, Ca

1 possible pts.