Teacher: Ms. Lee

Name: _____

1. 1

Which statement best describes an electron?

A. It has a smaller mass than a proton and a negative charge.
B. It has a smaller mass than a proton and a positive charge.
C. It has a greater mass than a proton and a negative charge.
D. It has a greater mass than a proton and a positive charge.

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2. 3

Which statement is true about the charges assigned to an electron and a proton?

A. Both an electron and a proton are positive.
B. An electron is positive and a proton is negative.
C. An electron is negative and a proton is positive.
D. Both an electron and a proton are negative.

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3. 1

In an experiment, alpha particles were used to bombard gold foil. As a result of this experiment, the conclusion was made that the nucleus of an atom is

A. smaller than the atom and positively charged
B. smaller than the atom and negatively charged
C. larger than the atom and positively charged
D. larger than the atom and negatively charged

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4. 1

Which particles account for most of the mass of the atom?

A. protons and neutrons
B. protons and electrons
C. neutrons and electrons

5. 1

Compared to the entire atom, the nucleus of the atom is

A. smaller and contains most of the atom's mass
B. smaller and contains little of the atom's mass
C. larger and contains most of the atom's mass
D. larger and contains little of the atom's mass

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6. 4

An experiment using alpha particles to bombard a thin sheet of gold foil indicated that most of the volume of the atoms in the foil is taken up by

A. electrons
B. protons
C. neutrons
D. empty space

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7. 4

The major portion of an atom's mass consists of

A. electrons and protons
B. electrons and neutrons
C. neutrons and positrons
D. neutrons and protons

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8. 1

In Rutherford's gold foil experiments, some alpha particles were deflected from their original paths but most passed through the foil with no deflection. Which statement about gold atoms is supported by these experimental observations?

A. Gold atoms consist mostly of empty space.
B. Gold atoms are similar to alpha particles.
C. Alpha particles and gold nuclei have opposite charges.
D. Alpha particles are more dense than gold atoms.

D. neutrons and positrons

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9. 1

In the wave-mechanical model, an orbital is a region of space in an atom where there is

A. a high probability of finding an electron
B. a high probability of finding a neutron
C. a circular path in which electrons are found
D. a circular path in which neutrons are found

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10. 2

Which group of atomic models is listed in historical order from the earliest to the most recent?

A. hard-sphere model, wave-mechanical model, electron-shell model
B. hard-sphere model, electron-shell model, wave-mechanical model
C. electron-shell model, wave-mechanical model, hard-sphere model
D. electron-shell model, hard-sphere model, wave-mechanical model

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11. 2

The modern model of the atom shows that electrons are

A. orbiting the nucleus in fixed paths
B. found in regions called orbitals
C. combined with neutrons in the nucleus
D. located in a solid sphere covering the nucleus

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12. 2

The atoms in a sample of an element must contain nuclei with the same number of

A. electrons
B. protons
C. neutrons
D. nucleons

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13. 1

In a sample of the element potassium, each atom has

A. 19 protons
B. 20 neutrons
C. 39 protons and neutrons
D. 39 neutrons

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14. 3

An atom that contains 8 protons, 8 electrons, and 9 neutrons has

A. an atomic number of 9
B. an atomic number of 16
C. a mass number of 17
D. a mass number of 25

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15. 2

The number of neutrons in the nucleus of an atom can be determined by

A. adding the atomic number to the mass number
B. subtracting the atomic number from the mass number
C. adding the mass number to the atomic mass
D. subtracting the mass number from the atomic number
