

The most active metals are in Group (1) 1(IA) (2) 2(IIA) (3) 13(IIIA) (4) 17(VIIA)

The elements known as the alkali metals are found in Group (1) 1(IA) (2) 2(IIA) (3) 13(IIIA) (4) 17(VIIA)

What is the total number of electrons found in the valence shell of an alkaline earth element in the ground state? (1) 1 (2) 2 (3) 3 (4) 4

As the elements in Group 2(IIA) are considered from top to bottom in the Periodic Table, the number of electrons in the 2s subshell (1) decreases (2) increases (3) remains the same

Which group contains atoms that form +1 ions having an inert gas configuration? (1) 1(IA) (2) 11(IIIB) (3) 17(VIIA) (4) 7(VIIB)

Which of the Group 16(VIA) elements listed below has the greatest nuclear charge? (1) F (2) Cl (3) Br (4) I

Which element is most likely to form a compound with oxygen? (1) fluorine (2) chlorine (3) bromine (4) iodine

Which group in the Periodic Table contains solid, liquid, and gaseous elements at room temperature? (1) 13(O) (2) 2(IIA) (3) 16(VIA) (4) 17(VIIA)

Which represents the correct order of activity for the Group 17(VIIA) elements? (> means greater than.) (1) bromine > iodine > fluorine > chlorine (2) fluorine > chlorine > bromine > iodine (3) iodine > bromine > chlorine > fluorine (4) fluorine > bromine > chlorine > iodine

If the elements are considered from top to bottom in Group 16(VIA), the number of electrons in the outermost shell will (1) decrease (2) increase (3) remain the same

Which group contains an element that is a liquid at room temperature? (1) 13(O) (2) 2(IIA) (3) 11(IIIB) (4) 12(IIIB)

Which element exists as a monatomic molecule at STP? (1) hydrogen (2) nitrogen (3) argon (4) chlorine

All elements whose atoms in the ground state have a total of 5 electrons in their outermost p sublevel are called (1) noble gases (2) metalloids (3) halogens (4) alkaline earth metals

Which electron configuration represents the atom in Period 2 with the largest covalent atomic radius? (1) $1s^2 2s^1$ (2) $1s^2 2s^2$ (3) $1s^2 2s^2 2p^1$ (4) $1s^2 2s^2 2p^2$

In general, the elements with lowest ionization energies would be classified as (1) halogens (2) noble gases (3) metals (4) nonmetals

The element in Period 3 that has the highest ionization energy is (1) a noble gas (2) a halogen (3) an alkali metal (4) an alkaline earth metal

The radius of a Na^+ ion would most likely be (1) 0.97 Å (2) 1.54 Å (3) 2.00 Å (4) 2.51 Å

A neutral oxygen atom (O) differs from an ion of oxygen (O^{2-}) in that the atom has (1) more electrons (2) fewer electrons (3) more protons (4) fewer protons

Magnesium has a smaller atomic radius than sodium because the magnesium atom has more (1) valence electrons (2) energy levels (3) protons (4) neutrons

When an atom loses an electron, its radius generally (1) decreases (2) increases (3) remains the same

When a fluoride atom becomes an ion, it will (1) gain an electron and decrease in size (2) gain an electron and increase in size (3) lose an electron and decrease in size (4) lose an electron and increase in size

Which electronegativity value is the most probable for a metalloid? (1) 1.0 (2) 2.0 (3) 3.0 (4) 4.0

An element that has both a high ionization energy and a high electronegativity is most likely a (1) metal (2) nonmetal (3) metalloid (4) noble gas

The atoms of the most active nonmetals have (1) small atomic radii and high ionization energies (2) small atomic radii and low ionization energies (3) large atomic radii and low ionization energies (4) large atomic radii and high ionization energies

Which is most characteristic of metals with very low ionization energies? (1) they are very reactive (2) they have small atomic radii (3) they form covalent bonds (4) they have high electronegativities

Which property would be generally associated with a very active metal? (1) large ionization energy (2) large atomic radius (3) tendency to form unstable compounds (4) tendency to form covalent compounds

A nonmetal which exists in the liquid phase at room temperature is (1) aluminum (2) mercury (3) hydrogen (4) bromine

As one proceeds from left to right across Period 3 of the Periodic Table, there is a decrease in (1) ionization energy (2) electronegativity (3) metallic characteristics (4) valence electrons

As one reads from left to right across Period 2, ionization energy generally (1) decreases, and atomic size decreases (2) decreases, and

1. The most active metals are in Group (1) 1(IA) (2) 2(IIA) (3) 13(IIIA) (4) 17(VIIA)

2. The elements known as the alkali metals are found in Group (1) 1(IA) (2) 2(IIA) (3) 13(IIIA) (4) 17(VIIA)

3. What is the total number of electrons found in the valence shell of an alkaline earth element in the ground state? (1) 1 (2) 2 (3) 3 (4) 4

4. As the elements in Group 2(IIA) are considered from top to bottom on the Periodic Table, the number of electrons in the 2s subshell (1) decreases (2) increases (3) remains the same

5. Which group contains atoms that form +1 ions having an inert gas configuration? (1) 1(IA) (2) 11(IIIB) (3) 17(VIIA) (4) 7(VIIB)

6. Which of the Group 16(VIA) elements listed below has the greatest nuclear charge? (1) F (2) Cl (3) Br (4) I

7. Which element is most likely to form a compound with krypton? (1) fluorine (2) chlorine (3) bromine (4) iodine

8. Which group in the Periodic Table contains solid, liquid, and gaseous elements at room temperature? (1) 13(O) (2) 2(IIA) (3) 16(VIA) (4) 17(VIIA)

9. Which represents the correct order of activity for the Group 17(VIIA) elements? (> means greater than.) (1) bromine > iodine > fluorine > chlorine (2) fluorine > chlorine > bromine > iodine (3) iodine > bromine > chlorine > fluorine (4) fluorine > bromine > chlorine > iodine

10. If the elements are considered from top to bottom in Group 16(VIA), the number of electrons in the outermost shell will (1) decrease (2) increase (3) remain the same

11. Which group contains an element that is a liquid at room temperature? (1) 13(O) (2) 2(IIA) (3) 11(IIIB) (4) 12(IIIB)

12. Which element exists as a monatomic molecule at STP? (1) hydrogen (2) nitrogen (3) argon (4) chlorine

13. All elements whose atoms in the ground state have a total of 5 electrons in their outermost p sublevel are called (1) noble gases (2) metalloids (3) halogens (4) alkaline earth metals

14. In which Group do the elements usually form oxides which have the general formula M_2O_3 ? (1) 1(IA) (2) 2(IIA) (3) 13(IIIA) (4) 14(IVA)

3. Which period contains elements that are all gases at STP? (1) 1 (2) 2 (3) 3 (4) 4

4. As one goes from lithium to fluorine in Period 2 of the Periodic Table, the atomic radius of the elements (1) decreases (2) increases (3) remains the same

5. What is the total number of elements in Period 2 that are gases at room temperature and standard pressure? (1) 1 (2) 2 (3) 3 (4) 4

6. Considered in succession, the elements in Period 2 of the Periodic Table show a decrease in atomic radius with increasing atomic number. This may best be explained by the fact that the (1) nuclear charge increases (2) number of principal energy levels increases (3) number of neutrons decreases (4) number of protons decreases

Which period contains more than one element that forms diatomic molecules of that element? (1) 1 (2) 2 (3) 3 (4) 4

8. In a given period of the Periodic Table, the element with the lowest first ionization energy is always (1) an alkaline earth metal (2) an alkali metal (3) a halogen (4) an inert gas

9. All elements in Period 3 have (1) an atomic number of 3 (2) 3 valence electrons (3) 3 occupied principal energy levels (4) an oxidation number of +3

10. Which element in Period 3 is the most active nonmetal? (1) sodium (2) magnesium (3) chlorine (4) argon

A pure compound is blue in color. It is most likely a compound of (1) sodium (2) lithium (3) calcium (4) copper

19. In which group do all the elements have the same number of electrons in the outermost principal energy level? (1) 6(VIB) (2) 9(VIII) (3) 18(O) (4) 14(IVA)

20. Which group contains two semi-metals (metalloids)? (1) 2(IIA) (2) 12(IIIB) (3) 13(IIIA) (4) 17(VIIA)

21. Which element in Group 16(VIA) has the greatest tendency to gain electrons? (1) Te (2) Se (3) S (4) O

22. Which element forms a -2 ion with the largest radius? (1) oxygen (2) sulfur (3) selenium (4) tellurium

23. As the elements of Group 15(VA) are considered in order of increasing atomic radius, their tendency to lose electrons (1) decreases (2) increases (3) remains the same

24. An atom in the ground state with eight valence electrons would most

24. Which is an example of a metalloid? (1) sodium (2) strontium (3) silicon (4) sulfur
25. Which element in Period 3 has both metallic and nonmetallic properties? (1) Na (2) Mg (3) Si (4) Ar
3. Elements in Period 3 are alike in that they all have the same number of (1) protons (2) neutrons (3) electrons in the valence shell (4) occupied principal energy levels
ne proceeds from left to right across Period 3, the number of electrons in the 2p subshell (1) decreases (2) increases (3) remains the same
 $2p^2 3s^2 3p^4$ is the electronic configuration of a neutral atom. This element belongs in Period (1) 2 (2) 3 (3) 4 (4) 6
The element is not a metalloid? (1) antimony (2) lead