

22. D In which choice below are the elements ranked in order of increasing first ionization energy?
 a. P, Cl, S, Al, Ar, Si b. Al, Si, S, P, Cl, Ar c. Ar, Cl, S, P, Si, Al d. Al, Si, P, S, Cl, Ar
23. D Which one of the following elements has the largest THIRD ionization energy?
 a. As b. Sc c. Ti d. Ca
24. D Which one of the following elements is the most metallic?
 a. Sr b. Ca c. K d. Rb
25. C Which one of the following elements is most likely to form several different positive ions?
 a. Al b. Cs c. V d. Ca
26. C Which is most equal to the number of the period in which a series of elements is located
 a. the number of valence electrons in the elements c. the number of occupied energy levels in the elements
 b. the number of electrons in the elements d. the number of protons in the elements
27. C Which is chemically most similar to calcium? a. K b. Sc c. Mg d. Na
28. B The ions O^{2-} , F^- , and Na^+ are referred to as isoelectronic species because they have the same
 a. electronegativity b. electron configuration c. nuclear charge d. ionic radius
29. A The atoms of the most active nonmetals have
 a. small covalent atomic radii and high electron affinities c. large covalent atomic radii and low electron affinities
 b. small covalent atomic radii and low electron affinities d. large covalent atomic radii and high electron affinities
30. D The alkaline earth metal that has the largest covalent atomic radius is found in period
 a. 1 b. 2 c. 6 d. 7
31. D The S^{2-} ion differs from the S atom in that the S^{2-} ion has a
 a. smaller radius and fewer electrons c. larger radius and fewer electrons
 b. smaller radius and more electrons d. larger radius and more electrons
32. A Within Period 3, as atomic number increases, atomic radius decreases. Which is the best explanation for this trend?
 a. nuclear (proton) charge increases c. # of occupied energy levels increases
 b. # of neutrons increases d. # of kernel electrons remains the same

Identify the group name for the following elements

alkaline earth calcium

noble gas neon

alkali cesium

transition silver

halogens fluorine

transition chromium

Why does the atomic size generally increase as you move down a group of the periodic table and decrease as you move from left to right across a period?

↓ # of energy levels increases

→ effective nuclear charge increases (# of protons)