

Multiple Choice. Write the letter that best corresponds to the correct answer for each three-pointer.

_____ 11) Early chemists arranged elements in increasing order of atomic _____. Later discrepancies were corrected by arranging them by atomic _____.

- a) structure, mass b) mass, number c) charge, number d) mass, subshells

_____ 12) Which one of these is not isoelectronic?

- a) Al^{3+} b) P^{3-} c) Cl^- d) Ca^{2+} e) Ar

_____ 13) Which of the following elements does not belong with the others?

- a) Se b) Si c) Te d) S e) P

_____ 14) Which statement is untrue?

- a) Noble gases are very stable because their s and p subshells are completely filled.
b) The more negative the electron affinity, the greater is the tendency for an atom to gain electrons.
c) The higher the ionization energy, the stronger the attraction between the nucleus and an electron.
d) The metallic character of elements increases from top to bottom within a particular group of representative elements.

Calculations, etc. Three points each.

15) The atomic radius of K is 216 pm and that of K^+ is 133 pm. Calculate the percent decrease in volume when $\text{K}(\text{g})$ is converted to $\text{K}^+(\text{g})$. Remember that $V = (4/3)\pi r^3$.

16) Write out the electron configuration for the As^{3-} ion.

17) Ramsay, Crookes, and Rayleigh discovered which unknown gas? _____