



Question-19

Which type of ion, cation or anion, will be formed by element A?

Solution:

C is less reactive than A

"C" will be smaller in size than "B" as the atomic size decreases as we go across a period.

Anion will be formed by element A

Question-20

Nitrogen (atomic number 7) and phosphorus (atomic number 15) belong to group 15 of the periodic Table. Write the electronic configuration of these two elements. Which of these will be more electronegative? Why?

Solution:

Electronic configuration - Nitrogen – $2s^2 2p^3$ and Phosphorus - $1s^2 2s^2 2p^6 3s^2 3p^3$. Nitrogen will be more electronegative; this is because its atom has small size due to which the attraction of its nucleus for the incoming electron is more.

Question-21

How does the electronic configuration of an atom relate to its position in the Modern periodic table?

Solution:

The electronic configuration of an atom increases in the outermost valence shell which relates to its position in the Modern periodic table.

Question-22

In the Modern periodic table, calcium (atomic number 20) is surrounded by elements with atomic numbers 12, 19, 21 and 38. Which of these have physical and chemical properties resembling calcium?

Solution:

The atomic number of calcium is 20, so its electronic configuration is 2, 8, 8, 2. Thus, calcium has 2 valence electrons (in its outermost shell). Now, the element which has 2 valence electrons, will have physical and chemical properties resembling to that of calcium. The electronic configuration of element having atomic number 12 is 2, 8, 2. It has 2 valence electrons just like calcium. So, the element having atomic number 12 will have physical and chemical properties resembling that of calcium.

Question-23

Where do you think should hydrogen be placed in the Modern periodic table?

Solution:

Hydrogen element has been placed at the top of group 1, above the alkali metals because the electronic configuration of hydrogen is similar to those of alkali metals.

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