

Electronic configuration of elements of 4th type

To write the electronic configuration of elements of atomic number 57, 58, 64, 71 the first electron after 6s sub shell will enter into 5d sub shell of place of 4f sub shell.

Similarly to write the electronic configuration of ~~other~~ elements of atomic number (89, 90, 91, 92, 93, 96, 97) the only first electron after leaving s-subshell will enter into 6d sub shell of place of 4f sub shell the remaining electron will enter into 5f subgroup shell.

Note $\Rightarrow$ Electronic configuration of 4 types is written by two steps.

(i) ~~step~~ According to described above.

(ii) second steps written arranging in the increasing order of orbits.

$$\begin{aligned}
 La_{57} &= 1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^6, 5s^2, \\
 &\quad 4d^{10}, 5p^6, 6s^2, 5d^1 \\
 &= 1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^2, 4p^6, 4d^{10}, \\
 &\quad 5s^2, 5p^6, 5d^1, 6s^2
 \end{aligned}$$

U₃₂ $\Rightarrow$ 1s², 2s², 2p⁶, 3s², 3p⁶, 4s², 3d¹⁰, 4p⁶, 5s²,
 4d¹⁰, 5p⁶, 6s², 4f¹⁴, 5d¹⁰, 6p⁶, 7s², 6d¹,
 5f³

= 1s², 2s², 2p⁶, 3s², 3p⁶, 3d¹⁰, 4s², 4p⁶,
 4d¹⁰, 4f¹⁴, 5s², 5p⁶, 5d¹⁰, 5f³, 6s², 6p⁶,
 6d¹, 7s²

Th₉₀ = 1s², 2s², 2p⁶, 3s², 3p⁶, 4s², 3d¹⁰, 4p⁶, 5s²,
 4d¹⁰, 5p⁶, 6s², 4f¹⁴, 5d¹⁰, 6p⁶, 7s², 6d²

= 1s², 2s², 2p⁶, 3s², 3p⁶, 3d¹⁰, 4s², 4p⁶,
 4d¹⁰, 4f¹⁴, 5s², 5p⁶, 5d¹⁰, 6s², 6p⁶,
 6d², 7s².

Teacher's Signature _____