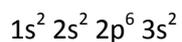


Question:

If the atomic number of a neutral atom is 11, how many valence electrons does the atom have? How many protons? Also, specify the number of electrons and protons in the core of the atom?

Answer:

The total number of electrons is the same as the atomic number, $n_e = 11$. These electrons are divided into electron shells the following way:



Valence electrons are those situated on the last electron shell. In this case $n_{\text{val}} = 2$.

The number of protons is the same as electrons, because the atom is neutral: $n_p = 11$.

The number of electrons and protons in the core of the atom is $n_n = n_e + n_p = 22$.