

SSLC -Chemistry -Class-05

Periodic Table and Electronic Configuration

Subshells



3- Shell number.

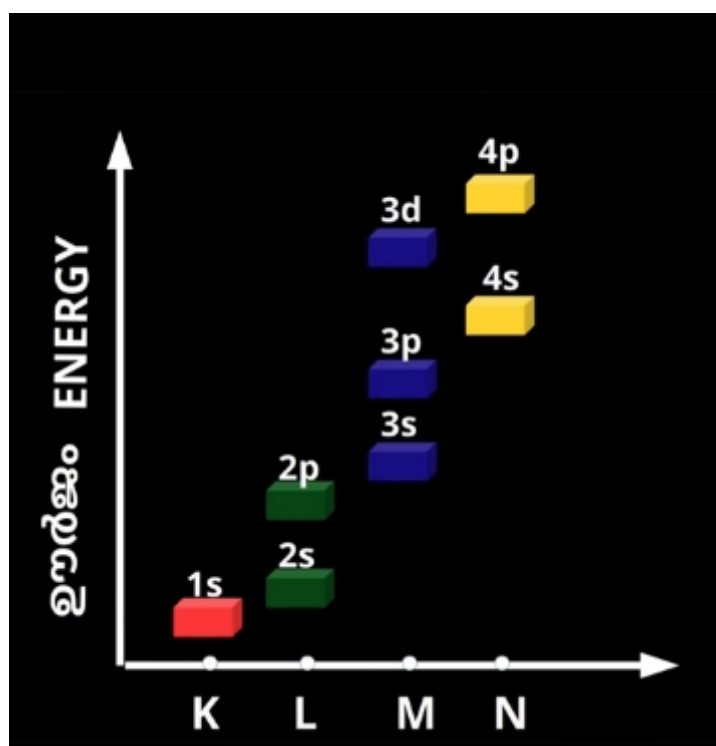
p- Subshell.

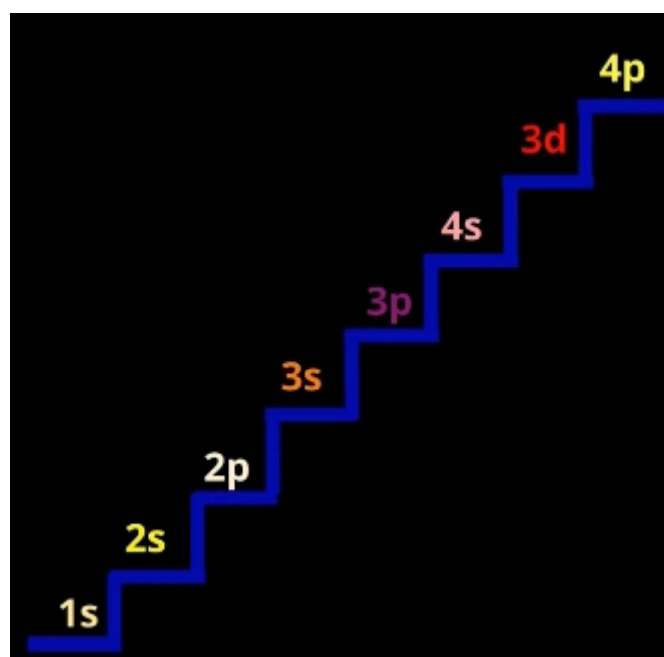
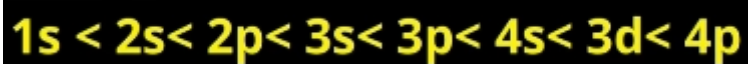
6- Number of electron in the subshell

Filling of electrons in the subshell

Electron filling takes place in the order of increasing energy

Sub shells and their energies.





The energy of 4s subshell is less than that of 3d

Element	Atomic Number	Subshell electronic configuration
Be	4	$1s^2 2s^2$
Ar	18	$1s^2 2s^2 2p^6 3s^2 3p^6$
K	19	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$
Sc	21	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^2$

Subshell electronic configuration (Short form)

Element	Subshell electronic configuration	Short form
Be	$1s^2 2s^2$	[He] $2s^2$

Mg	$1s^2 2s^2 2p^6 3s^2$	[Ne] $3s^2$
Sc	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^2$	[Ar] $3d^1 4s^2$

Questions

A. The subshell electronic configuration of an atom is $1s^2 2s^2 2p^6 3s^2$. Write the answers of the following

1. What is the atomic number of the element ?

2. How many shells are present in this atom ?

3. Which is the common subshell seen in all the shells ?

4. What is the total number of electrons in this atom ?

5. Write the subshell electronic configuration in short form
