

# STRUCTURE OF MATTER



Answer the following questions:

1)

- a) The atom is often compared to a miniature planetary system. What would represent the Earth and the planets in the atom? And the Sun?
- b) How many different types of particles are found in the atom? How are they called?
- c) How many zones can be distinguished in the atom? How are they called?
- d) In which area of the atom can protons be found?
- e) In which area of the atom can neutrons be found?
- f) In which area of the atom can electrons be found?
- g) What atomic particles contribute practically all of the mass of the atom?
- h) How many times is the mass of the proton greater than that of the electron?

2) Indicate whether the following statements are true or false

- a) Protons are particles found in the atomic nucleus and have a positive electric charge
- b) Electrons are found in the atomic nucleus and have a negative electrical charge
- c) Neutrons are the subatomic particles with the lowest mass
- d) Electrons are found in the atomic shell

3) Complete the gaps:

The atomic number of phosphorus is 15 and its mass number is 31.

The \_\_\_\_\_ of the \_\_\_\_\_ from phosphorus has protons and \_\_\_\_\_ neutrons. The \_\_\_\_\_ of the atom of phosphorus in a neutral state has \_\_\_\_\_

4) If Z is the atomic number of an atom of an element and A its mass number, then  $A-Z$  is:

The number of neutrons

The number of neutrons minus the number of protons

The number of electrons

5) The nucleus of an atom consist on 6 protons and 8 neutrons, so (you could select more than one):

Its atomic number is 8

Its mass number is 8

Its atomic number is 14

Its mass number is 14

Its number of electrons is 14

6) Complete the next table:

Atom	Z	A	Number of protons	Number of neutrons	Number of electrons
C	6	12			
Na			11	12	
Cl		35			17
Be		9			4
Ar	18			22	
O	8			8	
Al		27	13		
F			9	10	