

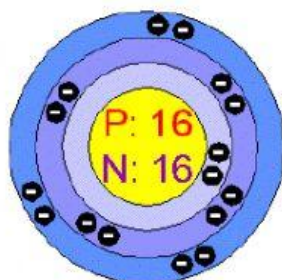
**Name:** \_\_\_\_\_

**Grade 8 Test**

**Exercise: 1**

**Atomic Structure**

Complete the sentences below using the atomic model of sulfur:



1. Sulfur atom consists of 2 parts: ----- and -----.
2. The nucleus of sulfur atom contains 16 ----- and 16 -----.
3. The ----- are null charged particles.
4. In sulfur atom, there are ----- negatively charged particles ----- the nucleus.
5. The negatively charged particles are called -----.
6. Sulfur atom is -----, then the number of -----  
(positively charged particles) is ----- to the number of ----- (negatively charged particles).

**Exercise: 2**

**Metals and Non-Metals**

Aluminum solid is ductile, malleable and of density  $2.7\text{g/cm}^3$ . A piece of aluminum of mass  $39.5\text{g}$  has a volume of  $35\text{cm}^3$ . However, Sulfur is tasteless and does not conduct heat or electricity well. Sulfur's melting point is low ( $115.2^\circ\text{C}$ ).

- 1- Pick out, from the text, the extensive and the intensive properties.

**Extensive properties:** ----- and -----

**Intensive properties:** ----- and -----

- 2- Classify aluminum and sulfur elements as metal or non-metal.

Aluminum is a -----

Sulfur is a -----

3.1 Aluminum is a ductile and malleable solid. Define the terms “Ductility” and “malleability”

**Ductility:** -----

**Malleability:** -----

3.2- Predict whether the melting point of aluminum is  $660^{\circ}\text{C}$ ,  $-25^{\circ}\text{C}$  or  $35^{\circ}\text{C}$ .

**The melting point of aluminum is** -----

4- List, from your own knowledge, **three** other characteristics of aluminum and sulfur.

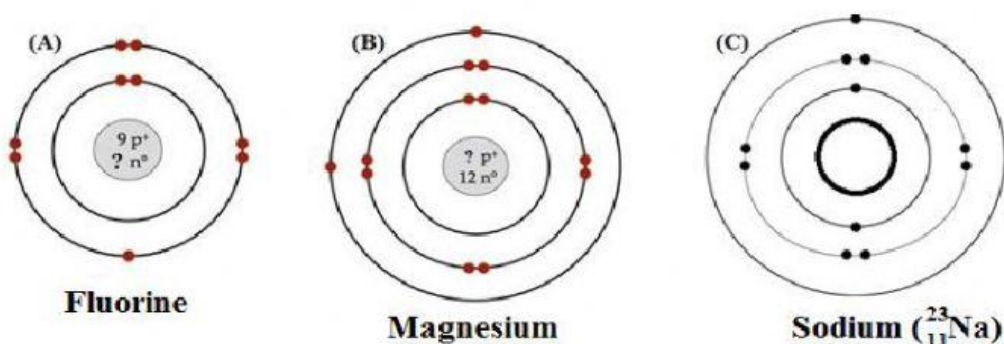
Aluminum	Sulfur

### Exercise: 3

### Atomic models

Magnesium fluoride and sodium fluoride are chemical compounds. Magnesium fluoride is a white crystalline salt with commercial uses in optics but sodium fluoride is primarily used, as a medication, to prevent tooth decay in children older than 6 month.

The figures below show the models (A), (B) and (C) of Fluorine, Magnesium and Sodium.



1- Referring to model (A):

1.1- Choose among the values below the one that corresponds to the number of electrons in the fluorine atom.

**a. 10**

**b. 9**

**c. 11**

1.2- Show that this model is a neutral atom.

---

\_\_\_\_\_ **then this model is a neutral atom**

1.3- Calculate the number of neutrons knowing that the mass number of fluorine atom is 19.

**Mass number = number of ----- + number of -----**

**Number of neutrons = ----- number - number of -----**

**= ----- - ----- = -----**

**2- Referring to model (B):**

2.1- Give the composition of the magnesium atom.

**Magnesium atom is made of ----- and -----**

**Since the atom is ----- then the number of**

**protons is equal to the number of ----- thus the number of**

**protons is -----**

2.2- Determine the atomic number of this atom.

**Atomic number = ----- = -----**

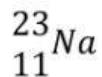
2.3- Calculate the number of nucleons in the nucleus of this atom.

Number of nucleons = number of ----- + number of ----- =  
 ----- + -----  
 = -----

2.4- Deduce the mass number of this atom.

Mass number = number of ----- = -----

**3-For model (c)**



3.1. Fill in the table below:

Symbol of element	Atomic number	Mass number

3.2. Complete the table below:

Subatomic Particle	Number
Protons	
Neutrons	
Electrons	