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 2.7g/cm^3. A piece of aluminum of mass 39.5g has a volume of 35cm^3. However, Sulfur is tasteless and does not conduct heat or electricity well. Sulfur's melting point is low (115.2°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.

LIVEWORKSHEETS

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^{0}C**, **-25^{0}C** or **35^{0}C**.

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

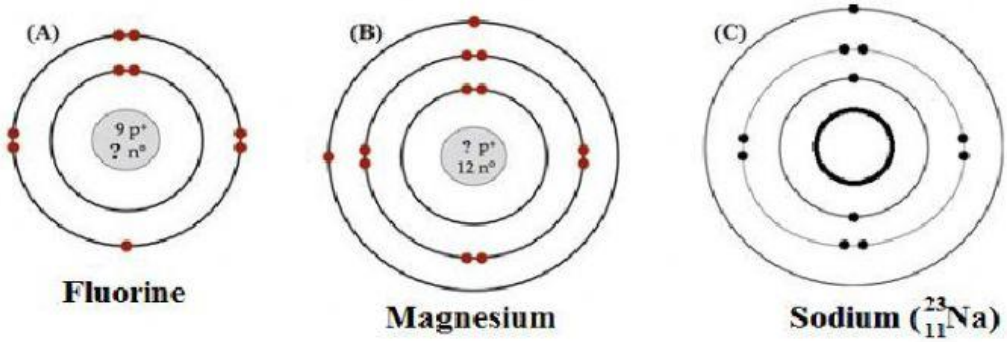
4- List, from your own knowledge, **three** other characteristics of aluminum and sulfur.

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.



Fluorine **Magnesium** **Sodium ($^{23}_{11}$Na)**

1- Referring to model (A):

LIVEWORKSHEETS

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.

LIVEWORKSHEETS

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

------ + ------

= ----------

2.4- Deduce the mass number of this atom.

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

3-*For model* (*c*)

$$^{23}_{11}Na$$

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	

LIVEWORKSHEETS