

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.

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 **660⁰C**, **-25⁰C** or **35⁰C**.

The melting point of aluminum is -----

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

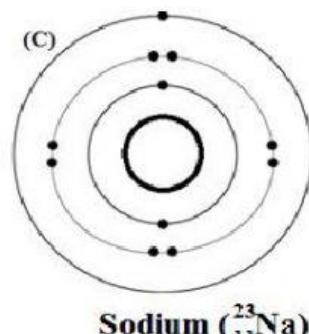
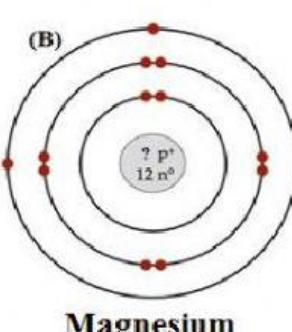
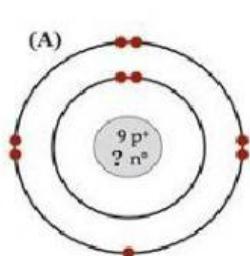
Aluminum	Sulfur

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 -----

$$= \text{-----} - \text{-----} = \text{-----}$$

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 ----- =

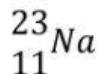
----- + -----

= -----

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	