

1. To explain the line spectra, Bohr assumed that electrons in atoms move in circular orbits around the nucleus as Rutherford did but he introduced some postulates:

- .
- .
- .

2. Complete the table:

| LEVEL | SHELL | Nº ELECTRONS |
|-------|-------|--------------|
| 1     |       |              |
| 2     |       |              |
| 3     |       |              |

3. Write out the electron distribution by shells of these neutral atoms and their ions.

|                  | K | L | M |
|------------------|---|---|---|
| F                |   |   |   |
| F <sup>-</sup>   |   |   |   |
| Al               |   |   |   |
| Al <sup>3+</sup> |   |   |   |
| N                |   |   |   |
| N <sup>3-</sup>  |   |   |   |
| Si               |   |   |   |
| Si <sup>4+</sup> |   |   |   |

4. Say the number of protons, electrons, neutrons, (p+n), Q, Z and A.



|    | p | e | n | N | Q | Z | A |
|----|---|---|---|---|---|---|---|
| 1º |   |   |   |   |   |   |   |
| 2º |   |   |   |   |   |   |   |
| 3º |   |   |   |   |   |   |   |
| 4º |   |   |   |   |   |   |   |

5. What is an isotope? What is an elementary substance? What is a chemical element?

- .
- .
- .

6. Properties of metals and non metals.

| METALS                                                   | NON-METALS                                                     |
|----------------------------------------------------------|----------------------------------------------------------------|
| Often                                                    | Dont'                                                          |
| Good conductors of and electricity.                      | Poor conductors of and electricity.                            |
| In normal conditions, except mercury.<br>Boiling points. | Many are but solids and liquids also exist.<br>Boiling points. |
| Create                                                   | Create                                                         |
| Flexible, and malleable.                                 | Solid non-metals are and brittle.                              |

7. Compound, simple substance or element??

|                      | COMPOUND | SIMPLE SUBSTANCE | ELEMENT |
|----------------------|----------|------------------|---------|
| OO OO OO<br>OO OO OO |          |                  |         |
| HNH HNH<br>HNH HNH   |          |                  |         |
| O O O O<br>O O O O   |          |                  |         |
| NN NN<br>NN NN       |          |                  |         |
| HOH HOH<br>HOH HOH   |          |                  |         |

8. Complete the table.

| SCIENTIST                      | CONTRIBUTION                                                                                                   |
|--------------------------------|----------------------------------------------------------------------------------------------------------------|
| Lavoisier (end of the century) | Metals and                                                                                                     |
| J. Doveireiner                 | Groups of elements.<br>The properties of the elements were an average of the properties of the other elements. |
|                                | Known elements with similar properties are grouped into groups of 8.                                           |
| D. Mendeleev and L.            | Place elements in increasing order of                                                                          |

9. What are molecules? what is a crystal lattice?.

• .

• .

10. Which are the fundamental units that form a substance?

- .
- .
- .
- .

11. Complete the table.

|        | COMPONENT | TYPE              | EXAMPLE | ELEMENT |
|--------|-----------|-------------------|---------|---------|
| FLUIDS |           | ISOLATED ATOMS    |         |         |
| FLUIDS |           | MOLECULES         |         |         |
| SOLIDS |           | METALLIC CRYSTAL  |         |         |
| SOLIDS |           | COVALENT NETWORK  |         |         |
| SOLIDS |           | MOLECULAR CRYSTAL |         |         |
| SOLIDS |           | IONIC CRYSTALS    |         |         |

12. What is to name? And to formulate?

- .
- .

13. Write the name and translate to Spanish.

- a) **CaCl<sub>2</sub>**
- b) **MgO**
- c) **NaCl**
- d) **FeCl<sub>3</sub>**
- e) **V<sub>2</sub>S<sub>5</sub>**
- f) **CH<sub>4</sub>**
- g) **NH<sub>3</sub>**
- h) **SiH<sub>4</sub>**

14. Write the formula and the Spanish name.

- a) **Magnesium dibromine**
- b) **Iron Trichloride**
- c) **Tricalcium Dinitride**

- d) Borane
- e) Phosphane
- f) Water

15. Which is the charge of the following elements?

- a) FeO
- b) OsO<sub>4</sub>
- c) FeS<sub>2</sub>
- d) TiCl<sub>4</sub>
- e) Fe<sub>2</sub>O<sub>3</sub>
- f) CrS<sub>3</sub>