PERIODIC TABLE OF THE ELEMENTS

1. Read the text.

PERIODIC TABLE OF THE ELEMENTS

The periodic table of the chemical elements is a tabular method of displaying the chemical elements. This invention is generally credited to chemist Dmitry Mendeleyev in 1869. Mendeleyev intended the table to illustrate "periodic" trends in the properties of the elements.

In 1869, Mendeleyev classified 56 elements on the basis of their physical and chemical properties in the increasing order of the atomic masses, in the form of a table. Mendeleyev had observed that properties of the elements orderly recur in a cyclic fashion. He found that the elements with similar properties recur at regular intervals when the elements are arranged in the order of their increasing atomic masses. He concluded that "the physical and chemical properties of the elements are periodic functions of their atomic masses". This came to be known as the law of chemical periodicity and stated: "The properties of the elements are a periodic function of the nuclear charges of their atoms".

Based on this law all the known elements were arranged in the form of a table called the 'Periodic Table'. D. I. Mendeleyev arranged all the elements in a table consisting of vertical groups and horizontal periods. In this table all the uncoordinated data on the properties of elements and their compounds are collected and arranged into one well-constructed system. It enables scientists to predict the possibility of discovering new elements and their properties and to correct the errors made in previous definitions of the properties of known elements.

The layout of the table has been refined and extended over time, as new elements have been discovered, and new theoretical models have been developed to explain chemical behavior. The periodic table is now used within the academic discipline of chemistry, providing an extremely useful framework to classify, systematize and compare all of the many different forms of chemical behavior. The table has also found wide application in physics, biology, engineering, and industry. The table contains 118 elements as of 30 December 2015.

EXERCISES

Exercise 1. Match the words with their definitions

1. **Periodic**	a) A characteristic or quality of something.
2. **Atomic mass**	b) A scientist who studies chemistry.
3. **Element**	c) The mass of an atom of a chemical element.
4. **Chemist**	d) A substance that cannot be broken down into simpler
5. **Property**	substances.
	e) Happening or recurring at regular intervals.

Exercise 2. True or False

Decide if the following statements are **true (T)** or **false (F)**.

1. Dmitry Mendeleyev invented the periodic table in 1869. ____
2. Mendeleyev classified 56 elements according to their colors. ____
3. The periodic table helps scientists predict new elements. ____
4. The law of chemical periodicity is based on atomic masses. ___
5. The periodic table is used only in chemistry. ___

Exercise 3. Complete the sentences

properties atomic one well-constructed 118 weight chemical errors vacant

1. The periodic table displays the _____ elements.
2. Mendeleyev arranged the elements in increasing order of their _____ masses.
3. Elements with similar _____ recur at regular intervals.
4. The periodic table helps to correct _____ in previous definitions.
5. As of December 2015, the table contains _____ elements.
6. There were several _____ positions in Mendeleyev's periodic table.
7. In this table all the data about chemical elements are arranged into _____ system.
8. Mendeleyev arranged the elements in order of increasing atomic _____

Exercise 4. Choose the correct option.

1. Mendeleyev's periodic table was created in …
   A) 1896 B) 1869 C) 1968
2. The periodic law states that properties of elements are periodic functions of their ….
   A) atomic number B) nuclear charges C) color
3. The periodic table is divided into ….
   A) periods and groups B) lines and columns C) symbols and masses
4. The modern periodic table contains ….
   A) 118 elements B) 100 elements C) 56 elements

5. The periodic table helps scientists to …
   A) destroy old elements
   B) predict new elements
   C) change chemical laws

Exercise 5. Make up questions.

A. What/ modern/ cornerstone/ chemistry?

B. _____

A. How many |were/ in 1869/ elements/ known?

B. _____

A. What/ predict/Mendeleyev?

B._____

A. What/ enable/ Periodic Table/ to predict/ scientists?

B._____