

GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ

WORKSHEET-3

SESSION-2020-21

CLASS-6 A,B,C,D,E & F

SUBJECT-CHEMISTRY

NOTE-Parents are requested to guide and help their child in solving the questions related to the topics given below. You are suggested to search for topic related details on internet.

Links- John Dalton - <https://www.youtube.com/watch?v=oh0cOOVs3kw>

Dalton's Atomic Theory- <https://www.youtube.com/watch?v=nRcJ8ZI76kY>

Mendeleev - <https://www.youtube.com/watch?v=IhLsW0j5qbw>

Laboratory apparatus - https://www.youtube.com/watch?v=3Fo09_v0Zz8

Chapter-1 What is Chemistry about?

Topic 1-The Founding Fathers of Modern Chemistry

John Dalton

John Dalton was born on 6 September 1766 in England. He got his primary education in a rural school. At the age of twelve, he took up a teaching job in a school. Later, he became a teacher in a college at Manchester. In 1800, he became the Secretary of the Literary and Philosophical Society of Manchester. In 1817, he was elected the President of the Society. He also became a Fellow of the Royal Society (FRS).



John Dalton (1766–1844)

He got interested in meteorology, and maintained the weather record for many years. At the age of 27, he published a book entitled *Meteorological Observations and Essays*.

Dalton laid the foundation of modern science by advancing his atomic theory in 1803.

The salient features of the theory are as follows-

- * Elements are made of extremely small indivisible particles called atoms.
- * The atoms of an element are all alike and differ from those of others.
- * Atoms can neither be created nor destroyed.

* Atoms of different kinds combine among themselves to form a compound.

* Atoms rearrange themselves in a chemical reaction.

He also gave a law of chemical combination - the law of multiple proportion.

Dalton studied the composition and pressure of gases in mixtures and gave a law, called Dalton's law of partial pressures.

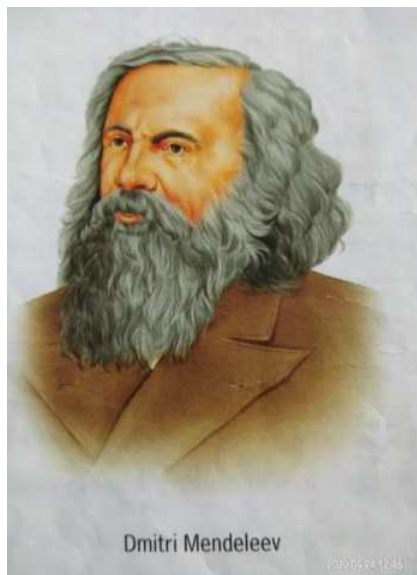
He also advanced a theory on colour blindness, from which he and his brother suffered.

He published a large number of research papers. His book entitled *New system of Chemical Philosophy* lists 20 elements and 17 molecules.

He died on 27 July 1844.

Dmitri Mendeleev

Dmitri Ivanovich Mendeleev was born in a village in Siberia on 8 February 1834. Mendeleev's fields of interest were chemistry, physics and geology. He is best known for the classification of elements. In 1869 he put forward his periodic law. And he classified the elements on the basis of this law. He presented a table called the periodic table. He brought similar elements together in a column, called a group. In the modern form of the periodic table, you will find that elements are classified into 18 groups. His table also helped him to predict the existence of



three elements today named as scandium, gallium and germanium.

He studied the origin and composition of petroleum, an underground deposit from which we get petrol.

He also studied how liquids expand when heated and gave laws governing their behaviour.

He introduced the metric system in the Russian Empire.

He was one of the founders of the Russian Chemical Society.

He was awarded the Davy medal and later the Copley medal by the Royal Society of London.

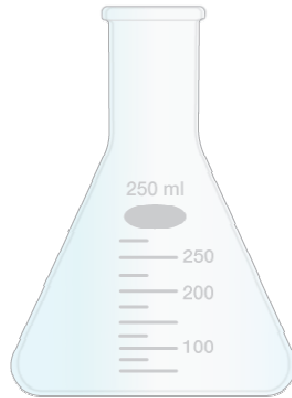
He was also elected a foreign member of the Royal Society.

In honour of his contribution to chemistry, the element now placed in the 101st house of the periodic table is named mendeleevium.

TOPIC 2- Common Laboratory Apparatus -



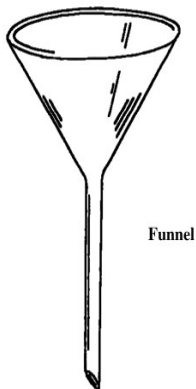
Round bottomed flask



Conical flask



Beaker

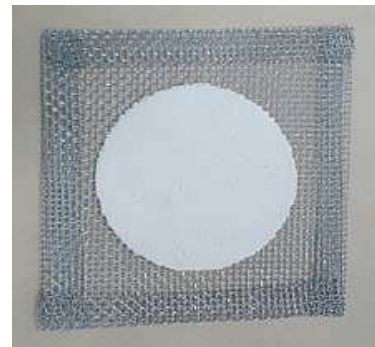


Funnel

Funnel



Test tube



Wire gauze



Watch glass



Test tube holder



Basin



Test tube stand



Bunsen burner



Tripod stand



Porcelain crucible



Stand with clamp

Answer the following questions-

A. Long-answer questions-

1. Mention the salient features of Dalton's Atomic Theory.
2. Describe the role of Mendeleev in classifying the elements.

B. Short-answer questions-

1. What do you understand by meteorology?
2. Name the law given by Dalton regarding the behaviour of gases.
3. Name two books published by Dalton.
4. What is petroleum?
5. Who introduced the metric system in the Russian Empire?

C. Fill in the blanks-

1. Dalton gave a law of chemical combination-- _____ .
2. Dalton advanced a theory on _____ from which he and his brother suffered.
3. Mendeleev is best known for the _____ of elements.
4. Mendeleev was awarded the _____ medal and later the _____ medal.
5. _____ studied how liquids expand when heated.
6. Mendeleev brought similar elements together in a column called a _____ .
7. In honour of Mendeleev's contribution to chemistry, the element now placed in the 101st house of the _____ is named _____.
8. Mendeleev studied the origin and composition of _____ .
9. _____ got interested in meteorology and maintained the weather record for many years.
10. Dalton's book entitled _____ lists 20 elements and 17 molecules.

D. Choose the most appropriate answer-

1. John Dalton was born in-
 - a) England
 - b) Siberia
 - c) India
2. John Dalton took up a teaching job in a school at the age of-
 - a) 30
 - b) 20
 - c) 12
3. Dalton laid the foundation of modern science by advancing his-
 - a) Atomic theory
 - b) Atomic model
 - c) Gas law

4. Dalton's law of partial pressure is related to the composition and pressure of these substances in mixtures-
 - a) Solids
 - b) Liquids
 - c) Gases
 5. Dalton advanced a theory on-
 - a) Hearing disorder
 - b) Colour blindness
 - c) Functioning of liver
 6. Dalton died on-
 - a) 27 July 1744
 - b) 27 July 1844
 - c) 27 July 1944
 7. Mendeleev's full name is-
 - a) Dmitri Mendeleev
 - b) Ivanovich Mendeleev
 - c) Dmitri Ivanovich Mendeleev
 8. We get petrol from-
 - a) Sea water
 - b) Molten rocks
 - c) Petroleum
 9. This law was given by Mendeleev-
 - a) Gas law
 - b) Periodic law
 - c) Law of partial pressures
 10. The element placed in 101st house of the periodic table is named-
 - a) Niobium
 - b) Actinium
 - c) Mendelevium
- E. Draw neatly the diagrams of following laboratory apparatus –
1. Test tube
 2. Funnel
 3. Bunsen burner
 4. Test tube holder
 5. Beaker
 6. Conical flask
 7. Basin
 8. Wire gauge

Let us know something more-

The table given below is known as *Modern Periodic Table*. In this table, all the elements are placed in a systematic manner. It makes the study of elements easy and systematic. You can have a look at it-

MODERN PERIODIC TABLE OF THE ELEMENTS LONG FORM

s - Block Elements (Groups IA, IIA) | **p - Block Elements (Except He.)** (Groups IIIA to VIIIA) | **d - Block (Transition) Elements** (Groups IIIB to IIB) | **f - Block (Inner - Transition) Elements** (Groups IIIA to VIIIA)

Metals (Alkali Metals, Alkali Earth Metals, Inner-Transition Metals, Lanthanides, Actinides, Transition Metals) | **Nonmetals** (Metalloids, Nonmetals, Halogens, Noble Gases, Transactinides)

Most Common Structures: CUBIC, CUBIC: face centered, CUBIC: body centered, TETRAGONAL, HEXAGONAL, RHOMBOHEDRAL, MONOCLINIC, ORTHORHOMBIC

Electrochemical Properties: ELECTRO NEGATIVITY, REDUCTION POTENTIAL ENER, OXIDATION, ATOMIC RADIUS, ELECTRON AFFINITY, METALLIC

INDEX: Atomic Number, Density (g/cm³), Atomic Weight, Electronegativity, First Ionization Energy, Melting Point, Boiling Point, State of Matter, Symbol, Name, Atomic Number, Group, Period, Block, Color, Crystal Structure

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MODERN PERIODIC TABLE

(The End)