

2026
2027

1

Science

Performances and Assessments

Name: .....

Class: .....

School: .....

Preparatory one

First Term

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Introduction

The Ministry of Education and Technical Education recognizes the importance of empowering teachers with effective tools that elevate classroom performance, enhance the quality of education, and improve its outcomes. This is a real response to the voices of teachers, interacting with the feedback channels from the educational field, and meeting the needs of teachers for flexible and comprehensive educational tools that assist them in fulfilling their noble educational mission.

This book has been designed to serve as an integrated educational support for teachers, helping them in planning and executing their teaching tasks efficiently. It also facilitates continuous assessment processes. The content has been designed to offer diverse models of effective classroom performance and educational activities created based on an interactive methodology that enhances active learning. It contributes to a qualitative shift in teaching practices, clearly focusing on the student as the core of the educational process.

The book includes formative and diagnostic questions, as well as purposeful learning tasks that students can complete as homework, enhancing the integration of learning inside and outside the classroom and contributing to the sustainable construction of learning for students. These tools help develop critical and creative thinking, deepen understanding, and support and enhance student motivation, giving them a sense of achievement and excellence.

It also includes short weekly tests and periodic assessments, allowing teachers to measure the extent of learning outcomes and address learning gaps early, providing feedback on the initial results. The performances at the end of each month are concluded with immediate training sessions that help improve student performance. These assessments are gradual, taking into account individual differences and targeting various levels of cognitive development, within a framework of diversity, depth, and integration, preparing students for monthly tests efficiently.

This book is a true translation of the Ministry's directions to ease the burdens on parents, provide supporting educational content that enriches the classroom environment, and allow teachers more time for educational innovation and productive interaction with their students. It also forms an effective tool in supporting the Ministry's direction to enhance learning outcomes, achieving a real transformation in the learning environment—from memorization to understanding, from rote learning to application, and from passive reception to active participation.

When we place this work in the hands of teachers and students, we hope it will be a valuable contribution to improving academic performance, enhancing the quality of education, and becoming an additional cornerstone in building a generation that is aware and knowledgeable, equipped with the skills and competencies needed for success in a world that demands creativity and innovation. It aims to have a tangible impact in realizing an ambitious educational vision for the future of education in our beloved country.

Allah is the one sought for help,
and He guides to the right path...

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Lesson (1) Structure of the Atom Weeks .....

Classroom performance **Date: / /**





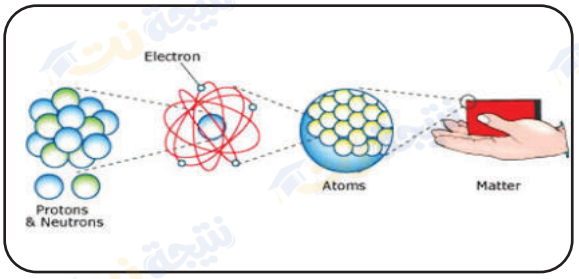
Study the opposite image carefully and then conclude the following:

All components of the image are similar because all of them are called .....

Why ? .....

What are the states that they exists? .....

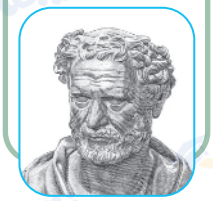
The opposite materials consist of small units called ..... which is consist of smaller units called .....



History of atom

After studying the history of atomic structure:

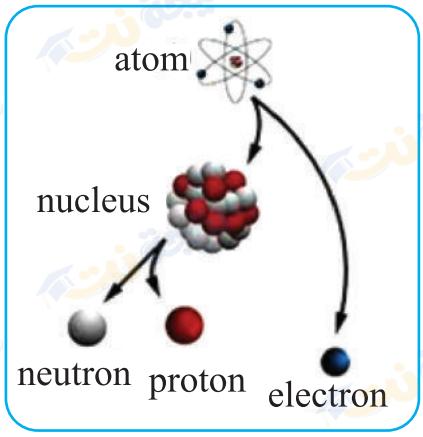
- Choose the appropriate image number for each of the following cards:

1	2	3	4	5
Ancient Greek philosophers	British scientist Dalton	British scientist Thomson	Ernest Rutherford	British scientist Chadwick
				

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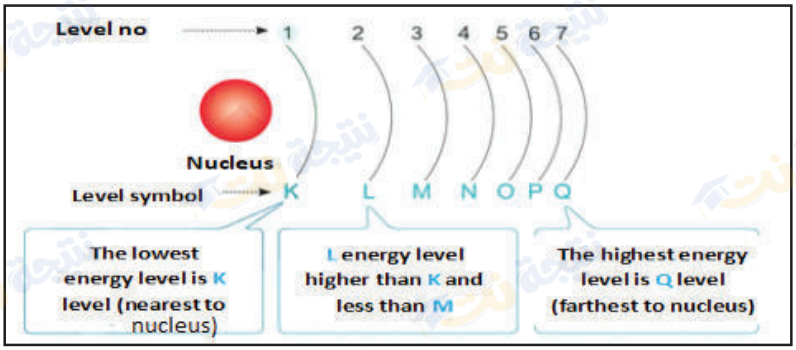
3	Electron discoverer
	He believed that matter consists of small, indivisible parts called "atoms".
	The first scientific theory about atoms was developed, explaining their indivisibility.
	First experimental model of the atom developed; discovery of the nucleus and positive protons
	Neutrons discoverer

Complete :



- Atoms are composed of a very small space called ……
- It contains two types of particles called ..... and ..... , they revolve around ..... at high speeds in energy levels , and they are all called ..... particles.
- Proton symbol is ..... Its charge is ..... and its mass =……
- Electron symbol is..... Its charge is ..... and its mass = …….
- Neutron symbol is ..... Its charge is ..... and its mass = …….
- The mass of……= The mass of……
- Although ..... and ..... have the same amount of charge, but they differ in .....and……..

Energy levels



- The orbits in which electrons revolve around the nucleus are called ..... and there are …..... of them.
- As we move away from the nucleus energy of the level is …….. .
- The energy of level M is greater than the energy of level ..... and less than the energy of level .....
- The number of electrons that saturate the first energy levels is …….. determined by the relationship ($2n^2$), where (n) is referred to ……..
- Any energy level does not contains more than …….. electrons.

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Element symbols:

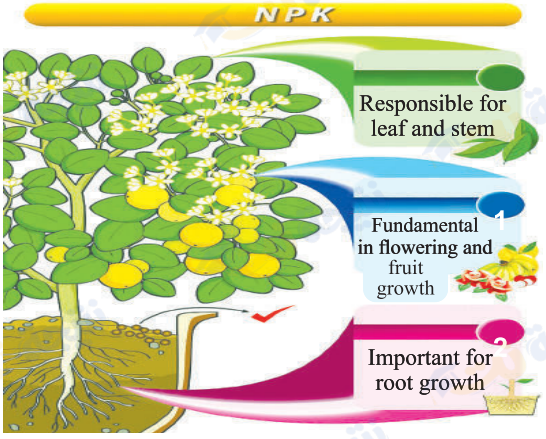
- Scientists expressed elements using chemical symbols derived from the Latin name of the element.

Element name in Latin	Element name in English	Symbol
Nitrogenium		
Natrium		
Kalium		
Carbo		
Calcium		
Cuprum		
Chlorum		
Hydrogenium		

By studying the symbols of the elements, complete the following table:

Element	Symbol	Element	Symbol	Element	Symbol
Hydrogen		**Mercury**			**Li**
Oxygen	**O**		**Ca**	**Sodium**	
	N	**Magnesium**			**K**
Fluorine	**F**		**Fe**	**Copper**	
Chlorine		**Lead**		**Silicon**	**Si**
	Br	**Zinc**		**Gold**	
Iodine			**S**		**Ag**
	C	**Phosphorus**		**Aluminum**	
Helium	**He**	**Neon**			**Ar**



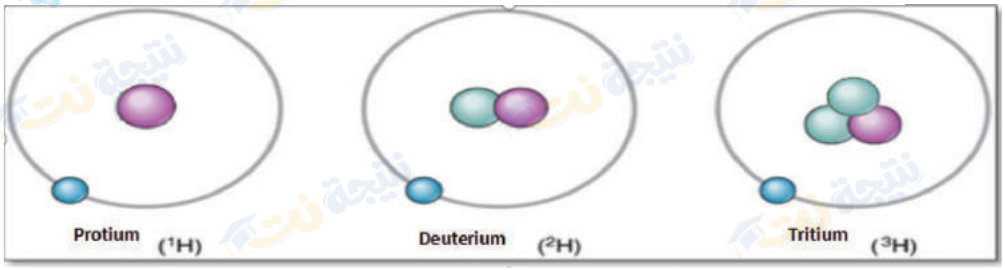


Write the name and symbol of the element that is suitable for its function as a plant fertilizer.

1-…… 2-……

3-……

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- Study the opposite figure carefully, which represents the electronic distribution of a hydrogen atom, then answer the following questions:

1- What are the three figure represent? .....

2- What is the differences between them? ....

3- What are the similarities between them? .....

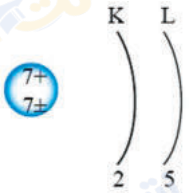
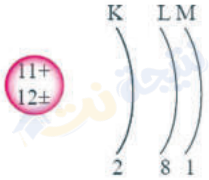
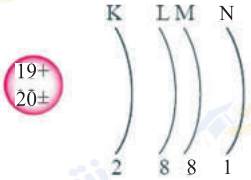
4- Write the mass number for each isotope of hydrogen? ..... and ..... and .....

Using the textbook and in light of your studied, define the following :

Matter	
Atom	
Fertilizers	
Isotopes	
Atomic number	
Mass number	

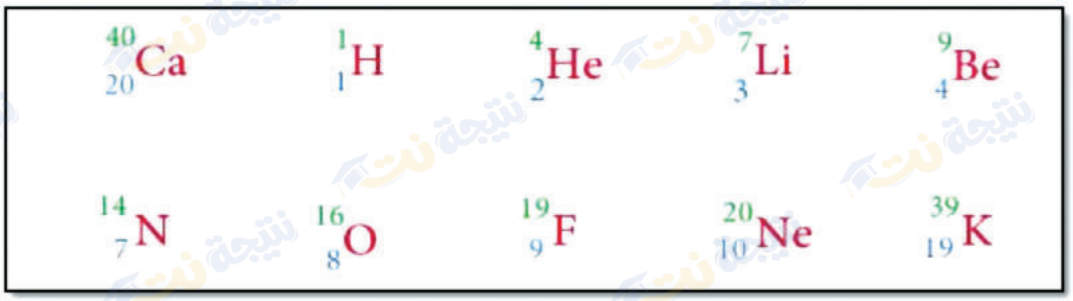
Home Work

1) Study the electronic configuration of the following elements and then answer each of the following:

			
	7+ 7± K L 2 5	11+ 12± K L M 2 8 1	19+ 20± K L M N 2 8 8 1
Atomic number			
Mass number			
Number of protons			
Number of electrons			
Number of neutrons			

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2) Draw the electronic configuration of the atoms of the following elements:



3) Answer the following:

A) If you know that the atomic number of sodium is 11 and its mass number is 23
find: the number of electrons , the number of protons and the number of neutrons?

.....

B) An element has a mass number of 35 and 18 neutrons in its nucleus
Calculate: the number of protons

.....

C) An element has a mass number of 40 and 20 neutrons in its nucleus Calculate the number of protons

.....

Weekly assessment for weeks (.....)

What is meant by each of the following:

1- Element: .....

2-Atom :.....

3-Atomic number :.....

4- Mass number :.....

5-Isotopes :.....

6-Fertilizers :.....

Compare between:

1-Protons, neutrons, and electrons in terms of:

a- Type of charge b – Location c – Mass

Point of comparison	Proton	Neutron	Electron
Type of charge			
Location			
Mass			

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2 – Element $^{32}_{16}S$, Element $^{40}_{20}Ca$ in terms of:

Point of comparison	Atomic number	Mass number	Electron **configuration**	Number of protons	Number of neutrons	Number of electrons	Number of levels occupied by electrons
Element $^{32}_{16}S$							
Element $^{40}_{20}Ca$							

3 – The three isotopes of hydrogen in terms of:

Point of comparison	Tritium	Deuterium	Protium
Name of isotope			
Number of neutrons			
Mass number			
Symbol			

Give reason for the following:

1- The nucleus of an atom is positively charged

.....

2- The mass of an atom is concentrated in the nucleus

.....

3- An atom is electrically neutral in its normal state

.....

4- The mass number is equal to the atomic number in a hydrogen atom

.....

5- The mass number is twice the atomic number in oxygen $^{16}O_8$ atom

.....

6- It is recommended we must not overuse agricultural fertilizers.

.....

7- The symbol for sodium is Na not S.

.....

8- The mass number is greater than the atomic number.

.....

9- The L level is saturated with eight electrons.

.....

10- The M level is filled with electrons before the N level.

.....

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Element (X) has 13 protons and the number of its neutron is increased by one more than its proton Find:

1- Number of electrons (.....)
2- Number of neutrons (.....)
3- Number of electrons in the last energy level (.....)
4- Draw a diagram showing the electronic configuration of this element (.....)

Element (Y) has electrons distributed in two energy levels, with its last energy level containing 4 electrons and its nucleus containing 6 neutrons.

1- Draw the electronic configuration of the element.
2- Find the mass number. (.....)
3- Find the atomic number. (.....)

Write the symbols of the following elements:

1. Zinc	(.....)	2.Potassium	(.....)
3.Silicon	(.....)	4. Gold	(.....)
5.Silver	(.....)	6.Copper	(.....)
7.Phosphorus	(.....)	8.Lead	(.....)
9.Mercury	(.....)	10. Chromium	(.....)

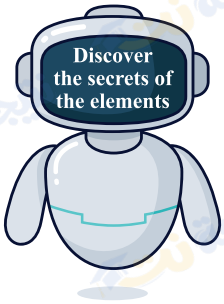
Write down what the following statements indicate:

1- New Zealand scientist won the Nobel Prize in Chemistry in 1908.
.....
2- Developed the first scientific theory about atoms
.....
3- The building unit of matter
.....
4- Positively charged particles found inside the nucleus
.....
5- Particles whose mass can be neglected but whose charge is not.
.....
6- Particles whose charge can be neglected but whose mass is not.
.....
7- Compounds used to improve agricultural production
.....
8- An element necessary for the greening of plant leaves
.....
9- An element necessary for strengthening plant roots
.....
10- An element necessary for healthy plant growth
.....

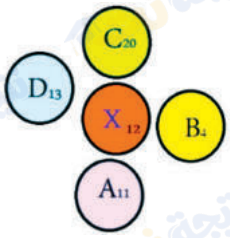
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Lesson two — The periodic Table of elements — Week .....

Class performance **Date: / /**

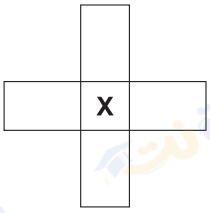


The opposite figure shows the symbols of some elements and their atomic numbers



Previous letters do not represent the true symbols of the elements

Put each element's symbol in the right place in the following table, which is part of the modern periodic table



Complete the following table:

Group number	.....	7A	.....	1A
Group name	Nobel gases	.....	Alkaline earth	.....

Through your understanding of Lewis structures, complete the following table:

The element	Ne_{10}	O_8	Li_3
Electron configuration	K=2 L=8	.....	.....
Lewis structure	.....		.....
Valency	.....	.....	Monovalent

Home Work

What is meant by each of the following:

1- Period number 2- Group number 3- Noble gases 4- Valency

What are the results of increasing the atomic number of each of the following:

1- Alkaline earth elements "in terms of chemical activity"

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2- Halogen elements "in terms of melting and boiling points"
3- Group 1 elements "in terms of atomic radius"

Arrange the following: (from right to left in the modern periodic table)
Transition element – semi-metal – inert gas – strong metal – non-metal

Compare between:
- Fluorine and cesium in terms of: their position in the periodic table – chemical activity.
- Mendeleev's periodic table – Moseley's periodic table – the modern periodic table in terms of: the scientific basis for classification.

Give Reason:
1- Both $_{13}$Al and $_{17}$Cl are located in the same period in the modern periodic table.
2- The reaction of potassium with water is more vigorous than that of sodium

Identify the location of the following elements in the modern periodic table:
1- $_{2}$He 2- $_{9}$F 3- $_{14}$Si

Weekly assessment (weeks .....)

Explain why:
1- Moseley rearranged the elements in ascending order according to their atomic numbers in his table.

.....

2- Scientists have made an attempts to classify the elements.

.....

3- Semimetals cannot be identified from their electronic distribution.

.....

4- $_{12}$Mg and $_{16}$S are in the same period.

.....

5- $_{20}$Ca and $_{4}$Be are in the same group.

.....

6- Elements in the same group have similar chemical properties.

.....

7-The valency of $_{11}$Na and $_{17}$Cl is monovalent.

.....

8- The valency of $_{10}$Ne = zero.

.....

9- The melting and boiling points of sodium and potassium are higher than room temperature.

.....

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10- The melting and boiling points of chlorine are lower than room temperature.

.....

11- The valency of alkaline earth metal is divalent.

.....

12- The valency of halogens is monovalent

.....

State the number indicating each of the following:

1- The number of elements in the modern periodic table (.....)

2- The number of elements in the first period (.....)

3- The number of elements in the third period (.....)

4- The number of blocks in the modern periodic table (.....)

5- The number of groups in block d (.....)

6- Number of groups in block p (.....)

7- Number of groups in the modern periodic table (.....)

8- Number of energy levels filled with electrons in a helium atom 2 (.....)

9- Group number of the element sulfur 16 (.....)

10- Number of single electrons in the outer energy level of a potassium atom 19 (.....)

11- Atomic number of an element in the third period, group 5. (.....)

12- Atomic number of an alkali metal in the third period. (.....)

13- Valency of a halogen element. (.....)

14- The atomic number of a monovalent metal (.....)

15-The atomic number of a divalent nonmetal element is in the third period. (.....)

16- The atomic number of an element is at the beginning of the third period. (.....)

17- The atomic number of an element at the end of the second period (.....)

18- The atomic number of an element at the end of the p block and in the third period (.....)

Compare between the following:

1- Mendeleev's periodic table and Moseley's periodic table in terms of: the basis of classification

Point of comparison	Mendeleev's periodic table	Moseley's periodic table
The basis of classification		

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2- S-block elements and P-block elements in terms of:

a - Number of groups b - Their location in the periodic table

Point of comparison	S-block elements	P-block elements
Number of groups		
Their location in the periodic table		

3- Metals and non-metals in terms of:

Point of comparison	Physical state	Their location in the periodic table	Number of electrons in the last energy level
Metals			
non-metals			

4- The elements $_{13}Al$ and $_{17}Cl$ in terms of:

Point of comparison	location	Lewis dot structure	Valency	Name of the group to which each belongs	Type of element	the block
$_{13}Al$						
$_{17}Cl$						

Write the name that represents each of the following sentences:

1 - A scientist who arranged the elements in ascending order according to their atomic numbers (.....)

2 - A scientist who arranged the elements in ascending order according to their atomic masses (.....)

3 - A scientist who added the zero group to Mendeleev's table (.....)

4- A scientist who proposed an easy way to express the number of valence electrons around the atomic symbol. (.....)

5- An inert gas located in the first period. (.....)

6- A liquid metallic element. (.....)

7- A liquid non-metallic element. (.....)

8- The smallest alkali metals in terms of radius. (.....)

9-The largest metals in terms of radius (.....)

10-The least active elements of group 10. (.....)

11-The most active elements of group 7 (.....)

12-The first element in the alkaline earth group (.....)

13-The halogens with the lowest melting and boiling points (.....)

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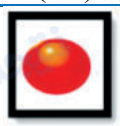
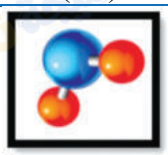
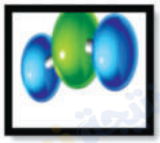
Second lesson

Matter and its properties

Week.....

Class performance Date: / /

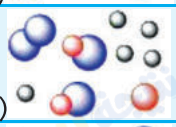
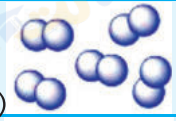
Observe the following figures carefully and answer the following questions:

(1)	(2)	(3)	(4)
			
(5)	(6)	(7)	(8)
			

Complete the following sentences:

1- Figure No. ..... represents a carbon dioxide molecule, while Figure No. ..... represents a water molecule.
2- Figure No. ..... represents an oxygen atom, while Figure No. ..... represents a carbon atom.
3- Figure No. ..... represents a hydrogen atom, while Figure No. ..... represents a sulfur atom.
4- The shape number ... represents a sulfur dioxide molecule, while the shape number ..... represents a carbon monoxide molecule.
5-The number of atoms in a carbon dioxide molecule is ..... while the number of elements is .....

Choose from column (A) what suits column (B):

Column (A)	Column (B)
Mixture	(.....) 
Atoms of element	(.....) 
compound	(.....) 
Molecule	(.....) 

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Home Work

What is meant by each of the following:

1 - Pure substances.
2 - Compounds.
3 - Elements.
4 - Mixtures.
5 - Homogeneous mixtures.
6- Heterogeneous mixtures.
7 - Solutions.
8 - Molecular formula.
9 - Physical properties.
10 - Chemical properties.

Correct the underlined words in the following sentences:

1 – Methane is considered an inorganic compound. (.....)
2 – Oxygen is considered a mixture. (.....)
3 – A table salt solution can be separated by filtration. (.....)
4 – Helium is used to fill car tires. (.....)
5 – Density and melting point are chemical properties of matter. (.....)
6 – Heterogeneous mixtures cannot be separated physical means. (.....)

Weekly assessment for weeks .....

Write the scientific term that refers to the following sentences:

1- The simplest pure form of a substance whose components cannot be separated by physical or chemical means. (.....)
2- A substances consisting of two or more materials that are not chemical combined. (.....)
3- Mixtures whose components can be distinguished with the naked eye. (.....)
4- A pure substance formed as a result of the chemical combination of two or more elements in a fixed mass ratio, whose components can be separated by chemical means. (.....)
5- An alloy that retains its strength at high temperatures and is used in the manufacture of military aircraft structures. (.....)

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6- A symbolic formula that expresses the type and number of atoms of the elements that make up the molecule (.....)

7- Properties that can be observed and some of which can be measured. (.....)

8- Properties that only appear when a chemical reaction occurs that leads to a change in the shape and structure of the substance. (.....)

Give one example for each of the following:

1- Molecule of an Organic compound (.....)

2- Element molecule consisting of a single atom (.....)

3- Physical property used to distinguish between materials (.....)

4- Chemical property used to distinguish between materials (.....)

5- Alloy made of iron with added elements ,to resist rust. (.....)

6- An alloy used in aircraft manufacturing (.....)

7- A low-density transparent material with 99.8% air content (.....)

8- A compound used to color house facades, papyrus, and statues.(.....)

9- A substance that regulates calcium and phosphorus levels in the blood. (.....)

Give one difference between the following:

1- A mixture of sand, iron filings, sugar, and water. In terms of separation methods.

.....

2- Oxygen molecules and water molecules. In terms of molecule type.

.....

3- O_3 molecules and C molecules. In terms of name – number of atoms that make up the molecule.

.....

4- Water and honey in terms of viscosity.

.....

5- Cork and iron in terms of density.

.....

6- Toothpaste and lemon in terms of their effect on sunflower leaves.

.....

7- Butter mold and aerogel plate. In terms of melting point.

.....

What happens in the following cases:

1 - Electrolysis of acidified water.

.....

2 - Heating a red mercury oxide compound.

.....

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3 - Dipping litmus paper in lemon juice.

.....

4 - Place a piece of wood in water.

.....

5 - Manufacture of iron cooking utensils.

.....

6 - Use of carbon dioxide gas to fill balloons.

.....

Give reason for :

1 - A hydrogen molecule is considered an element, while a sodium chloride molecule is considered a compound.

.....

2- Sea water is considered a homogeneous mixture.

.....

3- Wood floats on water, while iron sinks.

.....

4- Iron filings can be easily separated from flour.

.....

5 - Nitric acid is considered an inorganic compound.

.....

6 - Nitrogen is now used to fill car tires instead of air.

.....

7 - Helium gas is used to fill balloons.

.....

8 - Stainless steel alloy is used in the manufacture of cooking utensils.

.....

9- Aircraft structures are made of aluminum alloy and titanium.

.....

10- Aerogel is used to make jackets for research scientists in Antarctica.

.....

11 - Vitamin D is an important vitamin for the human body.

.....

First monthly training

1) Complete the following sentences.

1- The outer energy level of metals contains less than ..... electrons, while non-metals contain more than ..... electrons.

2- Element (A) has two electrons in the outer energy level (M), so its type is ..... Element (B) has six electrons in outer energy level (L) so its type is .....

3- All metals are solid substances except ..... is liquid.

4- Carbon is ..... atomic particle, while ..... is a polyatomic particle.

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5- Non-metals are solid materials such as ..... and ..... , gaseous materials such as ..... and ..... but the only liquid is .....

6- The period starts with elements of group ..... and is end by the elements of group .....

7- The second period begins with the elements of group ..... and ends with the elements of group .....

8- The modern periodic table consists of ..... periods and ..... groups

9- The modern periodic table consists of .... blocks.

10- The elements of block S are located ..... in the table and consist of ..... groups.

11- The elements of block ..... are located below the periodic table and consist of .... .

12- The elements of the noble gases are located in the …… block, which consists of …… groups

13- The elements of block..... are located in the middle of the periodic table and it consists of ..... groups

14- Boiling point of bromine ..... than the boiling point of chlorine

15- Elements in the same group are similar in ..... and .....

16- The scientific basis on which Mendeleev's table was .....

17 - The scientific basis on which Moseley's table was .....

18- The scientific basis on which the modern periodic table was ..... and .....

19- Moseley discovered that the properties of elements are related to its ..... and not to its .....

20- The elements of block p begin with group ..... and end with group .....

21- The halogens and noble gases are found in the elements of block .....

22- All elements of block ..... are solid metals except ..... is a gaseous non-metals.

23- The number of elements in the first period is ..... elements, while the number of elements in the fourth period is ..... elements.

24- The transition elements begin to appear from period ..... and consist of ..... groups.

25- Elements of the alkali group their chemical activity …….. as we move from top to bottom.

26- Elements of the halogen group their chemical activity …… as we move from top to bottom.

27- The radius is .....proportional to the atomic number of the elements in the same period.

28- Silicon and germanium are considered .....

29- The scientist ……. discovered that the nucleus of an atom contains positive protons.

30- ..... are substances whose components cannot be separated by chemical or physical means.

31- The components of water can be separated using a device called .....

32- Water is electrically decomposed into two elements ..... and .....

33- Mixtures are divided into ..... mixtures and .....mixtures.

34 - ..... mixtures their components cannot be seen by naked eye.

35- All substances are composed of small, identical units called .....

36- ..... molecules are composed of atoms of the same type, while molecules of ..... are composed of atoms of different elements.

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37 - The number of atoms in a single molecule in some organic compounds may reach several thousand, as in ..... and .....

38- ..... A pure substance consisting of two or more elements in a fixed mass ratio.

39- Nitric acid consists of three atoms of ....., one atom of hydrogen, and one atom of .....

40- Methane molecules are from ..... , while nitric acid molecules are from .....

41- Iron and cork can be distinguished by the difference in there .....

42- Helium is used to fill ..... while nitrogen gas is used to fill .....

2) Give reason for :

1- Calcium ($_{20}$Ca) is a metal, while chlorine ($_{17}$Cl) is a non-metal.

.....

2- Scientists have made numerous attempts to classify elements according to their properties.

.....

3- Moseley rearranged the elements according to their atomic numbers.

.....

4-Sodium ($_{11}$Na) is one of the alkali metals.

.....

5- Fluorine ($_{9}$F) is one of the halogens.

.....

6- Calcium ($_{20}$Ca) is one of the alkaline earth metals.

.....

7- The valence of inert gases is zero.

.....

8- It is difficult to identify semimetals from their electronic structure.

.....

9- Some physical properties of elemental atoms differ.

.....

10- A hydrogen molecule is considered an elemental molecule, while a sodium chloride molecule is considered a compound molecule.

.....

11- Seawater is considered a homogeneous mixture.

.....

12- Wood floats on water, while iron sinks.

.....

13- Iron filings can be easily separated from flour.

.....

14- A nitric acid molecule is considered an inorganic compound molecule.

.....

15- Nitrogen is used to fill car tires instead of air.

.....

16- Helium gas is used to fill balloons.

.....

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17- Stainless steel alloy is used in the manufacture of cooking utensils.

.....

18- Aircraft structures are made of aluminum and titanium alloys.

.....

19- Aerogel is used to make jackets for researchers in Antarctica.

.....

20- Vitamin D is an important vitamin for the human body.

.....

3) What is meant by :

1- Mendeleev's periodic table

.....

2- Moseley's periodic table

.....

3- Modern periodic table

.....

4- Metals

.....

5- Non-metals

.....

6- Semi-metals

.....

7- Valence

.....

8- Boiling point

.....

9-Melting point

.....

10- Pure substances

.....

11-Compounds.

.....

12- Elements.

.....

13-Mixtures.

.....

14- Homogeneous mixtures.

.....

15-Heterogeneous mixtures.

.....

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16 -Solution

.....

17-Molecular formula.

.....

18-Physical properties of matter.

.....

19-Chemical properties of matter.

.....

4) How to distinguish between:

1-Mendeleev's periodic table, Moseley's periodic table, and the modern periodic table in terms of: Classification basis.

.....

.....

.....

2-Elements of group (1A) and elements of group (7A) in terms of: Group name - the block which they belong to.

.....

.....

.....

3- Group (2A) elements and Group (0) elements in terms of: Group name - the block which they belong to.

.....

.....

.....

4- (Sand ,iron filings) mixture , and sugar mixture in water in terms of: Separation methods.

.....

.....

.....

5- Oxygen and water molecules in terms of: type of molecules.

.....

.....

.....

7- Water and honey in terms of: viscosity.

.....

.....

.....

8 - Cork and iron in terms of: density.

.....

.....

.....

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9- Toothpaste and lemon in terms of: effect on litmus paper leaves.

.....

.....

10- Butter mold and aerogel in terms of: melting point.

.....

.....

.....

5) What happens in the following cases:

1- Increase the atomic number of the elements in a single group from top to bottom relative to the radius.

.....

2 - Increase the atomic number of the elements in the same period from left to right relative to the radius.

.....

3 - The number of electrons in the outer energy level is less than 4 electrons for the type of element.

.....

4 - The number of electrons in the outer energy level is more than 4 electrons for the type of element.

.....

5 - The number of electrons in the outer energy level is filed completely with electrons for the type of element.

.....

6 - Increase in radius for the boiling and melting points of alkali elements.

.....

7 - Increase in radius for the boiling and melting points of halogen elements.

.....

8 - electrolysis of acidified water.

.....

9 - Heating red mercury oxide.

.....

10 - Dipping litmus paper in lemon juice.

.....

11 - Placing a piece of wood in water.

.....

12 - Use of iron in manufacture of cooking utensils.

.....

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6) Various questions:

1- What are the most important attempts that have been made to classify elements?

.....

2- What is the scientific basis for classifying elements in Mendeleev's periodic table?

.....

3- What is the scientific basis for classifying elements in Moseley's periodic table?

.....

4- What is the scientific basis for classifying elements in the modern periodic table?

.....

7) The opposite figure:

Represents the outer electrons with Lewis notation for an atom of an element located in the third period of the modern periodic table. **Find:**



A - Atomic number of the element (.....)

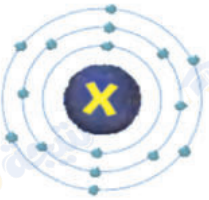
B - Valence of the element (.....)

C - Type of element (.....)

D. The atomic number of the element before it in the same period.
(.....)

E. The atomic number of the element before it in the same group.
(.....)

8) The opposite figure shows the electronic configuration of the element (X)Find:



1- Atomic number. (.....)

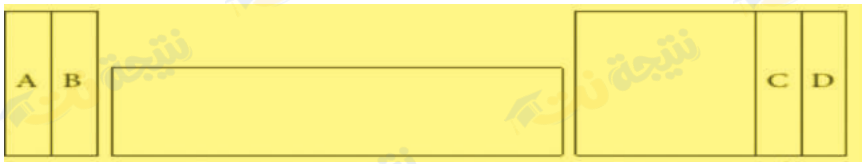
2- Locate the element in the periodic table . (.....)

3-Type of element. (.....)

4- Equivalence of the element . (.....)

9) The following figure shows some groups of the periodic table.

From the table shown, complete the following sentences.



1- The elements of group (A) are known as ..... elements, while the elements of group (D) represent ……..... elements.

2- The valency of the elements of group (B) is ..... while the valency of group (C) is .....

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10) The following figure illustrates the elements of the second cycle:
Find the following from the figure:

Group no	1A	2A	3A	4A	5A	6A	7A	0
Element	Li	Be	B	C	N	O	F	Ne

1- valency of Boron . (.....)
2- Type of Lithium . (.....)
3- Metal element with divalent valency (.....)
4- Semimetal element. (.....)
5- Halogen element. (.....)
6- Nonmetal element with divalent valency. (.....)
7- Inert element. (.....)

11) Calculate the atomic number for each of the following:

1- An element located in the second period and the fifth group (.....)
2- A divalent metallic element located in the second period . (.....)
3- A divalent non-metallic element located in the second period. (.....)
4- An element located at the beginning of the second period. (.....)
5- An element located at the end of the third period. (.....)
6- An element from the alkali metals located in the fourth period. (.....)
7- An element from the noble gases located in the first period. (.....)
8- An element from the alkaline earth metals located in the third period.
(.....)
9- The last energy level M has the same number of electrons as level K .
(.....)

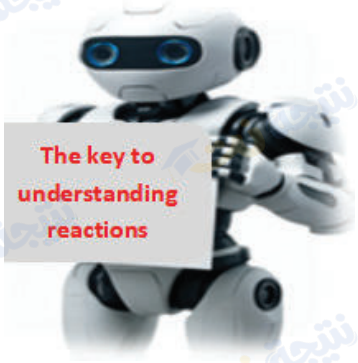
12) Give one example for each of the following:

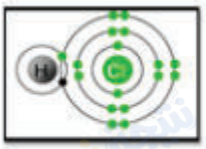
1- Organic compound molecule (.....)
2- Element molecule consisting of a single atom (.....)
3- Physical property used to distinguish between materials (.....)
4- Chemical property used to distinguish between materials (.....)
5- Alloy made of iron with added materials, resistant to rust. (.....)
6- An alloy used in aircraft manufacturing (.....)
7- A low-density transparent material with 99.8% air content (.....)
8- A compound used to color house facades, papyrus, and statues.(.....)
9- A substance that regulates calcium and phosphorus levels in the blood .
(.....)

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Lesson two — Chemical Bonds — Week .....

Class performance **Date: / /**

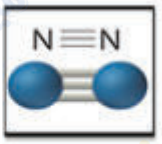




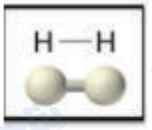
1



2



3



4

Which of the following represents:

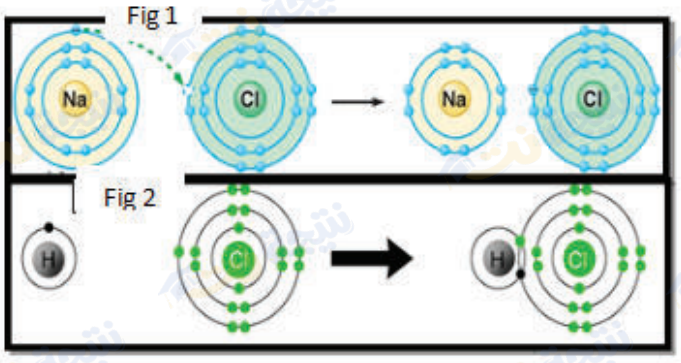
a)Triple covalent bond (.....)

b) Double covalent bond (.....)

c) Single covalent bond (.....)

d) molecule of compound (.....)

Observe the following figures carefully and answer the following questions:



1- How many charges does the cation carry? (.....)

2- Identify the location of the previous elements in the periodic table.

(.....)

3- What type of bond is shown in the first figure? (.....)

4- In the second figure, how many electrons are there in the two atoms after bonding? (.....)

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Home Work

Compare between:

1- Positive ions and negative ions in terms of:

a) Definition
b) Number of electrons
c) Number of protons
d) Number of energy levels.

2- Ionic compounds and covalent compounds in terms of:

a) Solubility in water
b) Melting point.
c) Boiling point.
d) Electrical conductivity.

Give reason for the following:

1-The bond in the sodium chloride molecule is ionic.

2-The bond in the hydrogen chloride molecule is a single covalent bond.

3-The bond in the oxygen molecule is a double covalent bond.

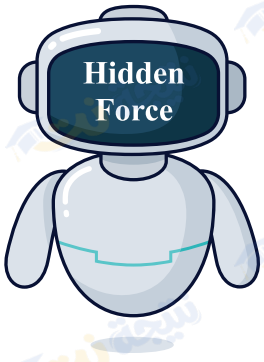
4-The bond in the nitrogen molecule is a triple covalent bond.

5-When a sodium atom loses an electron, it becomes a positive ion.

Lesson one — **Electric Forces** — **Week .....**

Class performance **Date: / /**

1. Observe the following figures then answer:







The previous figures share a common concept, which is .....
.....

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2. Electrons tend to transfer from one place to another all the time. This means that they can transfer from our furniture to our clothes, and from our clothes to the body of one of our classmates when we greet them or shake their hand. Discuss with your classmates and then identify from the following figures the person who receives or passes electrons.



Second person ..... First person .....



Second person ..... First person .....

Hidden Force :

3- Look at the opposite figure and answer the following:



A. When rubbing a wooden ruler with the child's hair, electrons are transferred from ..... to ..... according to the electrostatic series.

B. The child's hair gains a ....charge as a result of ..... electrons, while the ruler gains a .....charge of as a result of ..... electrons

C. Paper scraps are attracted to the ruler even though they do not touch each other (reasons) .....
.....

4- If you know that humid air is a natural conductor of electricity, and that the weather in a certain place is dry with low humidity in winter, while the weather in summer is humid with high humidity.





Based on your understanding of the previous statement, in which season is static electricity more spreads, and why?

.....
.....

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5. Based on your study of the forces of attraction and repulsion between electric charges, what happens in the following cases?

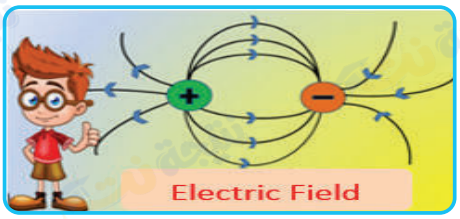


....

6- What type of charge is formed on a piece of silk and a glass rod when they are rubbed together with an explanation?.....



7- Based on your study of the diagram illustrating the characteristics of electric force lines, identify the correct and incorrect statements and correct the incorrect ones :

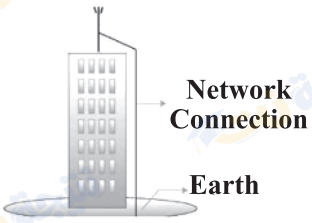


A- Electric force lines are imaginary and intersect with each other. (.....)

B. Electric force lines begin at the negative charge and end at the positive charge. (.....)

C. Electric field lines do not penetrate the surfaces of charged metal objects. (.....)

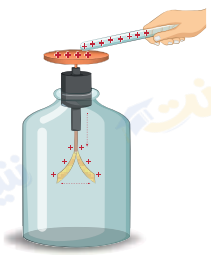
8- Learn about the system described in this facility. Write down the name of the system and its use.



.....

.....

9- What happens to my gold foil with the electric detector when I replace the positively charged rod with another rod charged with a negative charge?



.....

.....

10- What happens in the following cases:

A- Rub the two ebonite rods with a piece of silk and bring them close together .....

B- Hanging a ebonite rod after rubbing it with silk and bringing a glass rod closer after rubbing it with silk .....

.....

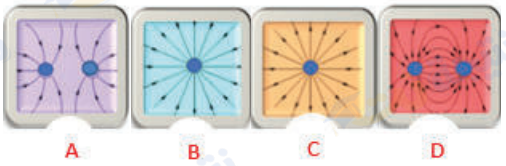
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C. Hanging an ebonite rod after rubbing it with silk and bringing it close to an unrubbed glass rod .....

D. Touching a charged electrical torch with your hand .....

.....

11- The following figures represent electric force lines.



After studying the previous figures, complete the following sentences:

Figure (A) represents the electric field lines of two charges .....

Figure (B) represents the electric field lines of a charge.....

Figure (C) represents the electric field lines of a charge.....

Figure (D) represents the electric field lines of two charges .....

Home Work

1-Give reasons for the following:

A. Metal chains hang in contact with the ground from fuel tank.

.....



B. The electrostatic plating method is preferred for metal plating.

.....



2-What kind of charge is formed on a piece of wool and a rod of ebonite when they are rubbed together with an explanation

.....

3- Identify the device shown in the figure, write its name and mention its use? .....

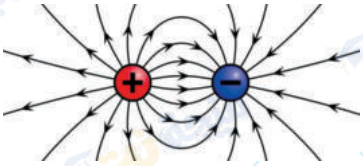


4- From your study of the figure showing the characteristics of power lines, Identify the right and wrong statements and correct the wronge ones:

a. Power lines are real and don't cross each other. (.....)

b. Electric power lines begin at positive charge and end at negative charge. (.....)

c. Power lines penetrate the surfaces of charged metal objects. (.....)

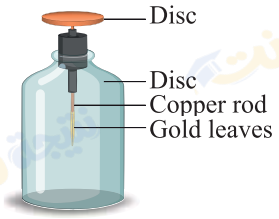


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5- Identify the device shown in the figure, write the name of the device and mention its use

.....

.....



Weekly assessment (.....)

What is meant by:

1- Static electricity

.....

2- Electrostatic series

.....

3- Electric field

.....

4- Power lines

.....

Explain the following:

1- Electrostatic electricity is called static electricity.

.....

2- Small scraps of paper are attracted to the ebonite rod when rubbed with silk.

.....

3- Small scraps of paper are not attracted to the copper rod when rubbed with wool.

.....

4- Gasoline tank have metal chains hanging from them that touch the ground.

.....

5- The charge of the glass rod becomes positive when rubbed with silk.

.....

6- Electrostatic plating of metals is preferable to other methods.

.....

7- Lightning rod is used in buildings and structures.

.....

Complete the following statements:

1- When an ebonite rod is rubbed with a piece of wool, the rod gains a …….. charge while the piece of wool gains a …….. charge

2 - Different electrical charges are ..... while similar electrical charges are .....

3 - Electric charges accumulated on the surfaces of objects are known as .....

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4 - Objects that can be charged with an electrostatic charge can be made of non-conductive materials such as ..... and .....

5- Electrostatic series is the arrangement of certain substances according to the easiness of ..... electrons.

6- Electrostatic series substances include rubbing material as ..... , ... and cotton .

7- Weak electrical charges are measured with a device .....

8- When painting metals by the electrostatic painting method, the object to be painted is charged with ..... charge and the paint spray with ..... charges.

9- ..... is a system used to protect buildings and structures from lightning strikes.

10- Power lines start from the ..... charge and end at ..... charge.

11- Power lines are lines ..... they do not intersect with each other.

12- Power lines end on the ..... of the charged metal objects and do not penetrate them.

13- Electroscope is known as .....

14- Electroscopes are used to infer ..... and determine the type of .....

Choose the correct answer:

1- A positive electric is gained when a rod of ..... which is rubbed with a piece of silk

A – glass B - ebonite C - copper D - wood

2- When a rod of ebonite is rubbed with silk, ... charges transfers from the silk to the ebonite

A - protons B - electrons C - neutrons D - atoms

3- A rod of ..... is charged with a static electric charge when rubbed, but it must be insulated from the hands.

A – iron B - glass C - ebonite D - plastic

4- The electrostatic series is the arrangement of some substances according to how easily they are lost .....

A - protons B - electrons C – neutrons D - molecules

5- ..... is used to protect buildings and structures from lightning strikes

A - Coulomb meter B - Electroscope
C - Lightning rod D - Voltmeter

6- A device ..... is used to detect the electric state of an object.

A - Hoffman voltmeter B - Electroscope
C - Lightning rod D - Voltmeter

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7- ..... is a device that measured the weak electric charge.

A - Coulomb meter B - Electroscope
C - Lightning rod D - Voltameter

Write what the following statements mean:

1- Electric charges accumulated on the surfaces of objects when they lose or gain electrons. (.....)

2- Arranging some materials according to the ease of losing electrons.

3- The device used to measure weak electric charges. (.....)

4- A system used to protect buildings and structures from lightning strikes. (.....)

5- The area surrounding electric charges and showing their effect without contact. (.....)

6- Imaginary lines showing the path taken by a small free-moving positive charge placed in it. (.....)

7- A device used to determine the type of electric charges. (.....)

What happens when :

1- Rubbing two ebonite rods with a piece of silk and bringing them close to each other

.....

2 - Hanging an ebonite rod after rubbing it with silk and bringing a glass rod close after rubbing it with silk

.....

3 - Hanging an ebonite rod after rubbing it with silk and bringing a glass rod close without rubbing it.

.....

4- Touching the disk of a charged electroscope by hand

.....

5 - Approaching a positively charged glass rod from a negatively charged electroscope.

.....

6 - Approaching a negatively charged ebonite rod from a negatively charged electroscope.

.....

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lesson two

Magnetic forces

Week .....

Class performance **Date: / /**



1- If you know that copper coins are not made of copper alone but are made of an alloy of both copper and nickel, what happens if you bring a copper coin close to a magnet?

.....

.....

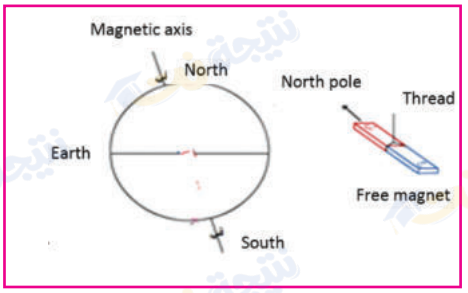
2- When the larger magnet stronger than the smaller magnet?

.....

.....



3- Discuss with your classmates whether magnetic materials such as iron and nickel are magnets? Explain your answer and give reasons.....

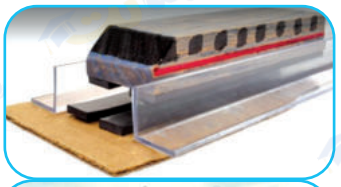


4- If you know that the north pole of a magnet points to the geographic north of the Earth, discuss with your classmates whether the south magnetic pole of the Earth corresponds to the north pole of a freely suspended magnet or not. Explain your answer and give reasons.

.....

5 - a) How many mechanical engines does the magnetic Maglev train shown in the corresponding figures contain?

.....





b) Does this train run on rails?

Explain why. .....

6. Discuss with your classmates the shapes of the magnets in front of you, then write down the name of each shape.











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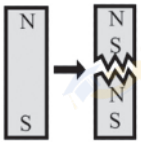


7- a) Identify the tool shown in the opposite drawing and write its name. .....

b) Write the function of that tool. .....

c) Explain why the freely moving magnetic needle is placed inside a case made of copper or plastic.

.....

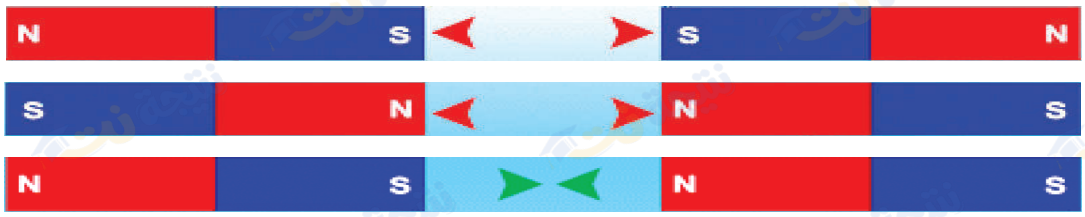


8 - Study the corresponding figure carefully, then conclude what happens when a single magnet is broken into several pieces?

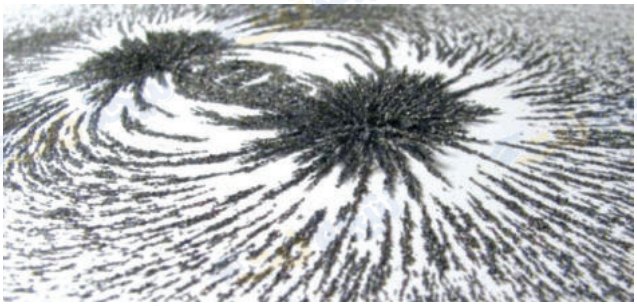
.....

9- Based on your study of the pictures shown, discuss with your classmates the magnetic property that is expressed in the drawing .....

.....



10 - By studying the diagram showing the characteristics of magnetic lines of force, put (√) or (X) then correct the wrong one.



A. Magnetic lines of force are imaginary and intersect with each other. (.....)

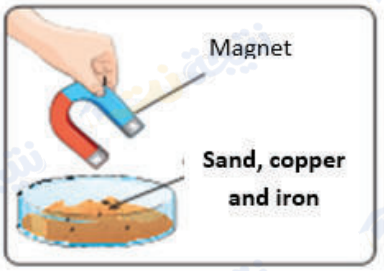
B. Magnetic lines of force start at the North Pole and end at the South Pole. (.....)

C. Magnetic field lines condenses at the poles and diverge as they move away from them. (.....)

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Home Work

1- Study the opposite figure then answer the questions :



a) Why was the copper coil not attracted to the magnet?.....

b) Why was the iron filings attracted to the magnet? .....

2- The figure shows some metallic materials, Classify the metallic materials shown in the figure according to their attraction to a magnet.

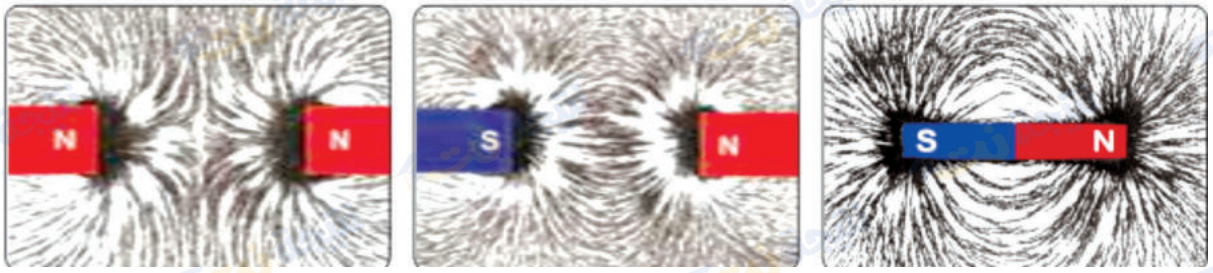


3- The following figures represent magnetic field lines. Identify which one represents:

a) Magnetic field lines between two different magnetic poles.

b) Magnetic field lines between two similar magnetic poles.

c) Magnetic field lines of a magnet.



_____ _____ _____

4- Write the scientific term

A) A natural stone that has the ability to attract objects made of iron.

B) Materials that are not attracted to magnets.

C) Materials that are attracted to magnets.

D) The area surrounding a magnet where its magnetic force is appears.

E) Imaginary lines representing the strength of a magnetic field.

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5- What happens in each of the following cases:

a) When a magnet is brought close to a mixture of iron filings and copper filings.

b) When a magnet is dipped into a box containing iron filings.

c) When a magnet is suspended freely from its center.

d) Bringing the north pole of a magnet close to the north pole of another freely suspended magnet.

e) Bringing the south pole of a magnet close to the north pole of another freely suspended magnet.

Week assessment (.....)

What is meant by each of the following?

1- Magnetic materials

.....

2- Non-magnetic materials

.....

3- The law of attraction and repulsion

.....

4- Magnetic field

.....

5- Magnetic field lines

.....

Give reason for the following:

1- Nickel and cobalt are magnetic materials.

.....

2- Aluminum and silver are non-magnetic materials.

.....

3- Compass cases are made of copper or plastic, not iron.

.....

4- Iron filings gather in large quantities at each pole of the magnet.

.....

Complete the following sentences:

1- From the types of artificial magnets are magnetic rods, ..., and .....

2- Magnets have two poles: .....pole and ..... pole.

3- The magnetic force is strongest at ..... and decreases at .....

4- The compass case is made of ..... or .....

5- A compass consists of a ..... magnet free-moving fixed at .....

6- When a magnet is suspended freely, it points in the direction of ..... and .....

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7- The north pole of a magnet is symbolized by ..... and the south pole by .....

8- When a magnet is divided into several parts, each part is a new .....

9- ..... magnetic poles are repelled, while opposite poles are .....

10-Magnetic field lines emerge from the ..... pole toward the..... pole

Choose the correct answer

1 – All of the following are types of artificial magnets except .....

A – Magnetic needle B – Magnetic rod
C – Horseshoe D – Magnet stone

2- ..... is a magnetic material

A – Gold B – Silver C – Copper D – Cobalt

3- .....is a non-magnetic material

A – Iron B – Nickel C – Aluminum D – Cobalt

4 – ..... is an ancient tool used in to determine the main four directions

A – Compass B – sand-dial C – Sun-dials D – Balance

5- The strength of a magnet increases at ..... the magnet

A – the middle B – the poles C – the side D – the surface

6- Magnetic field lines condensed at .....

A – the north pole only B – the south pole only
C – the north and south poles D – the middle of the magnet

7- Magnetic field lines start from ..... to .....

A – The North Pole to the South Pole
B – The South Pole to the North Pole
C – From the middle of the magnet to its end
D – From the end of the magnet to its middle

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lesson three

Gravitational Forces

Week .....

Class performance Date: / /

Observe the following figures:






You and a classmate drop a piece of wood, a feather, and a ball from the same height at the same time (assuming no air resistance).

Why do all objects fall downward toward the center of the Earth? .....

Which of these objects will reach the ground first? .....

1- Circle the shape that represents the force of gravity.


Fig (A)


Fig (B)


Fig(C)

2- What are the similarities between the types of forces in the three figures?

.....

The hidden force between two bodies

1.Observe the following figures, which represent the mutual gravitational forces between two spherical bodies made of the same material. The arrows indicate the direction of the mutual gravitational force (F).



Fig (3)



Fig (2)



Fig (1)

A. Arrange the forces of attraction from smallest to largest in figures (1) and (2).

.....

B. Arrange the forces of attraction from largest to smallest in figures (2) and (3).

.....

C. What factors affect mutual forces of attraction?

....

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2. Observe the following shapes of an object in three different places:

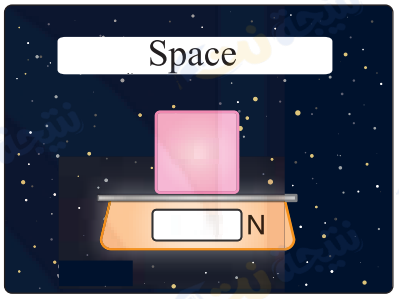


Figure (1)

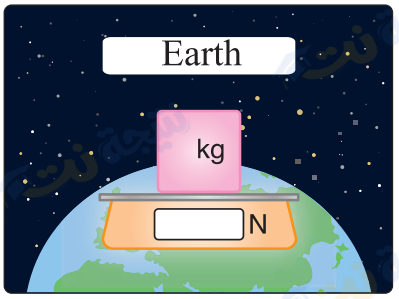


Figure (2)

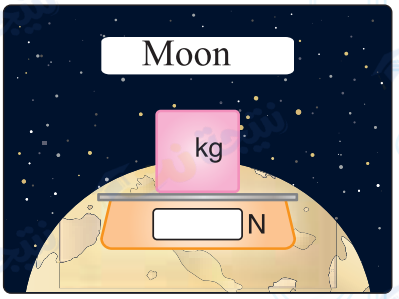


Figure (3)

1- What physical quantity is measured in kilograms (kg)? .....

2-What physical quantity is measured in newton (N)? .....

3- Which of the two physical quantities is constant for an object in all places?

....

4-What is the relationship between the two quantities? .....

Explain the relationship between the attraction force of the Earth to the Moon and the attraction force of the Moon to the Earth.

Complete: The gravitational force of the Earth to the Moon is ..... than the attraction force of the Moon to the Earth.

(Explain your answer) :

.....



Home Work

1- Compare between:

A. Mass and weight. B. Gravity on Earth and gravity on the Moon.

2-Give reason:

A. The weight of a body at the Earth's surface is always greater than its mass.

B. The weight of a body different from one planet to another.

3- What is meant by:

A. Contact forces B. Field forces C. Orbital motion

Week assessment (.....)

What is meant by each of the following:

1- Gravitational forces .....

2- Contact forces.....

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3- Field forces .....
4- Orbital motion .....
5- Mass of an object .....
6- Weight of an object.....

Explain why:

1- All objects fall downward toward the center of the Earth.

.....

2- There is a field in the magnetic forces , but there is no field in the collision forces.

.....

3- The force of attraction between two objects increases by there masses increase.

.....

4- The weight of an object on the Earth surface is greater than its weight on the moon surface.

.....

5- The weight of an object different from one planet to another.

.....

6- An object has no weight in outer space.

.....

Complete the following sentences:

1-The force that causes an apple to fall to the ground is the force of .....

2- The forces that affect objects when they come into contact with each other are ..... forces, ... forces, and ..... forces.

3- The force of gravity is represented by ..... lines.

4- By increasing the mass of two objects, the force of attraction between them ……..

5- By increasing distance between two objects, the force of attraction between them…….

6- The phenomenon of tides occurs in Fundy Bay in Canada, and the difference between high and low tide reaches ..... meters.

7-The phenomenon of tides is used to clean ..... impurities.

8- The phenomenon of tides can be used in ..... as a source of renewable energy.

9-Black holes are formed when ..... collapses at the end of its life.

10- Black holes are characterized by a ..... force. so ..... cannot escape from it.

11- ..... is the force of attraction between any object orbiting in space in a curved path around another central object.

12- The movement of the moon around the Earth is a ..... movement but the example of orbital motion is ……

13- The rotation of electrons around the nucleus of an atom is an example of ..... motion.

14- The gravitational field on the Earth's surface is ..... as we move away from its center

15- The weight of an object ..... from one planet to another

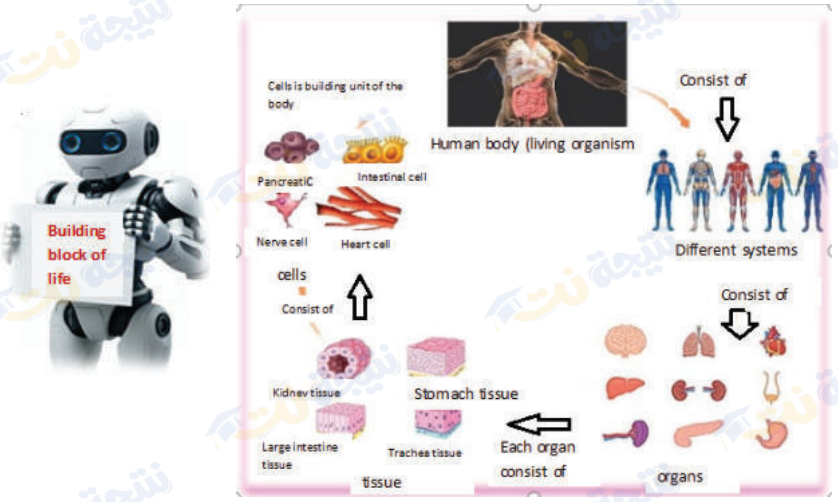
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16- A ..... is used to measure the weight of an object
17- The weight measuring unit is ..... while the mass measuring unit is .....
18- Weight = ... × .....
19- An object with a mass of (500 g) its weight is ..... newtons.
(Note that the gravitational field intensity) is (N/Kg 10)
20- An object weighing 50 newtons its mass is ..... kg.
(Note that the gravitational field intensity) is (N/ Kg 10)

First lesson **Cells and life** **Week .....**

Class performance **Date: / /**

The image in front of you shows the organisation in humans:



- The smallest structural unite is .....
- The largest structural unit of the body of the living organism .....
- A group of similar cells is called .....
- The group of different tissues that work together is called .....
- The group of different organs that work together is called .....

Complete the following diagram:

cell → ..... → organ → ..... → Living organism

Classify the organisms in the table according to the number of cells that build the body of the organism and the structure of the nucleus, as in the first example:

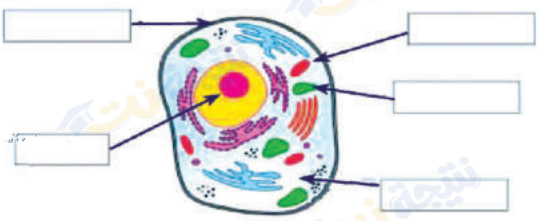
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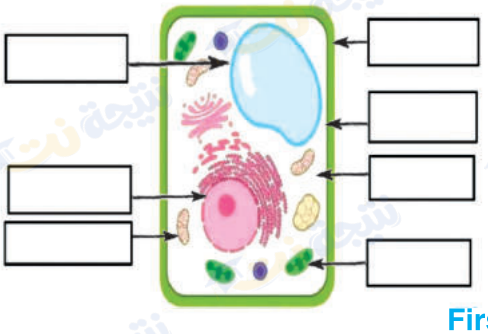
Classification	Living organism	Classification	Living organism
Organism name: ..... Classification:		Organism name: Rabbit Classification: living organism Multicellular Eukaryotes Animal	
Organism name: ..... Classification:		Organism name: ..... Classification:	
Organism name: ..... Classification:		Organism name: ..... Classification:	
Organism name: ..... Classification:		Organism name: ..... Classification:	

Solve the puzzle

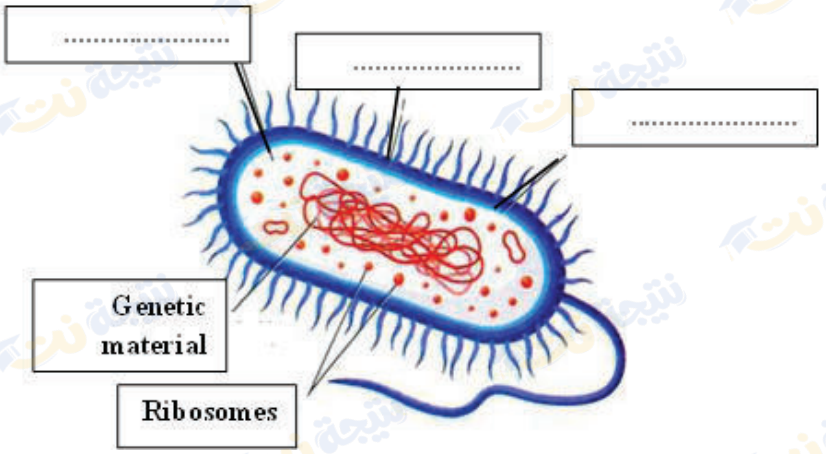
Use the following ingredient cards to complete the data for plant and animal cells as eukaryotes and bacterial cells as prokaryotes in the appropriate places on the diagrams below:

vacuoles	Endoplasmic reticulum	Golgi apparatus
Cell wall	Cell membrane	nucleus
cytoplasm	mitochondria	chloroplasts





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From the previous figures, explain:

1- Structures (organelles) common to animal cells, plant cells, and bacterial cells.
.....

2-The common organelles in the plant cell and the bacterial cell.
.....

3- A structure that is absent in the bacterial cell and the plant cell and found in the animal cell only. .....

4- A structure that is absent in the bacterial cell and the animal cell and is found in the plant cell only. .....

The following figure shows some organisms:



A - Names each slide. .....

b. What are the type of each one?
.....

C - Why we must use a microscope to examine these organisms?
.....

D - Which of them are considered as protozoa?
.....

Home Work

1- Write what the following statements means

A - the building unit of the living organism.

B - the arrangement of living organisms into groups based on their similarities and difference to facilitate their study.

C - Undifferentiated cells that have the ability to be transformed and differentiated into all differentiated body cells.

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2- Choose the odd word and then mention the relation between the rest:

A) Bacteria - Euglena - Paramecium - Amoeba.

B) Cell wall - chloroplast - centrosome - Golgi apparatus.

3- Give reason for: Prokaryotes cannot be as stem cells.

4 - Complete the following statements:

A - The human body consists of a group of .....

B - Living Organisms are classified into ..... and ..... depend on their nucleus.

C - Stem cells are characterized by several characteristics, including their ability to ..... through division and their ability to produce ..... .

Second Month exercise

Write the scientific term:

1- An atom of a metallic element that lost one electron or more. (.....)

2- An atom of a non-metallic element that gained one electron or more. (.....)

3- A bond formed as a result of an electrostatic attraction between a positive and a negative ion. (.....)

4- Compounds that dissolved in water and conduct the electric current. (.....)

5- Compounds that do not conduct electric current. (.....)

6- A bond formed between two atoms of two different nonmetallic elements or between two atoms of one nonmetallic element. (.....)

7- A bond formed when each atom shares by one electron. (.....)

8- A bond formed when each atom shares by two electrons. (.....)

9- A bond formed when each atom shares by three electrons. (.....)

10- The simplest molecule of an organic compound in which a carbon atom is bonded to four hydrogen atoms. (.....)

11- Electric charges accumulated on the surfaces of objects when they lose or gain electrons. (.....)

12- Arranging some substances according to how easily they lose electrons. (.....)

13- The device used to measure weak electrical charges. (.....)

14- A system used to protect buildings and structures from lightning strikes. (.....)

15- The area surrounding the electric charges and its effect appears in it. (.....)

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16- Imaginary lines showing the path taken by a small free-moving positive charge placed in it. (.....)

17- A device used to determine the type of electric charge. (.....)

18 - A natural stone that has the ability to attract objects made of iron. (.....)

19- Substances that are not attracted to a magnet. (.....)

20- Materials that are attracted to magnets. (.....)

21- An ancient tool used to determine the four geographical directions. (.....)

22- Similar magnetic poles repel and different magnetic poles attract. (.....)

23- The area that surrounds the magnet where the effects of its magnetic force are appears. (.....)

24- Imaginary lines representing the power of the magnetic field (.....)

25- The building unit of the living organism. (.....)

26- A group of similar cells that work together and perform a specific function. (.....)

27 - A group of different tissues that work together and perform a specific function. (.....)

28- A group of different organs that work together. (.....)

29- Organisms are arranged in groups according to their similarities and differences for easy study. (.....)

30- Undifferentiated cells have the ability to transform into all the differentiated cells of the body. (.....)

31 - Simple organisms whose body consists of a single unspecialized cell. (.....)

32 - Complex living organisms consists of many cells that are distinguished and specialized in their work. (.....)

Compare each of the following:

1- The positive ion and the negative ion in terms of:

Compare	The positive ion	The negative ion
Definition		
Number of electrons		
Number of protons		
Number of energy levels		

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2- Animal cell, plant cell and bacterial cell in terms of :

Compare	Cell wall	plasma membrane	centrosome	Chloroplasts	Golgi apparatus	vacuoles
Animal cell						
Plant cell						
Bacterial cell						

Give reason:

1-The bond in the sodium chloride molecule is ionic.

.....

2- The bond in the hydrogen chloride molecule is single covalent

.....

3- The bond in the water molecule is single covalent

.....

4- The bond in the oxygen molecule is double covalent

.....

5- The bond in the nitrogen molecule is triple covalent

.....

6- When the metallic ion loses an electron, it turns into a positive ion

.....

7- When the halogen gains an electron, it turns into a negative ion

.....

8- there is a bond between two chlorine atoms, but there is can't formed between two sodium atoms

.....

9- Ionic compounds are neutral charge.

.....

What happens when:

1- Rubbing two ebonite rod with a piece of silk and bringing them close together.

.....

2 - Suspend a rod of ebonite after rubbing it with silk and bring a rod of glass close to it after rubbing it with silk.

.....

3- Hanging a rod of ebonite after rubbing it with silk and approaching a rod of glass that has not been rubbed with silk.

.....

4- Touching a charged the metal disk of the electroscope with hand.

.....

5- Approaching a positively charged glass stem from a negatively charged the metal disk of the electroscope.

.....

6- Approaching a negatively charged leg of ebonite from a negatively charged the metal disk of the electroscope.

.....

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7- Approaching a magnet to a mixture of iron filings and silver filings.

.....

8- Dipping a magnet into a box containing iron filings.

.....

9- When a magnet is suspended freely from its center.

.....

10- When splitting a single magnet into several parts.

.....

11- The south pole of the magnet is brought close to the south pole of a freely suspended magnet

.....

12- The south pole of the magnet is brought close to the north pole of a freely suspended magnet

.....

13- The absence of gravity.

.....

14- Increasing the mass of an object relative to the gravity between them.

.....

15- The distance between the two objects decreases relative to gravity between them.

.....

What is meant by:

1- Positive ion :.....
2- Negative ion:.....
3- Ionic bond:.....
4- Covalent bond:.....
5- Single covalent bond .....
6- Prokaryotes:.....
7- Eukaryotes :.....
8- Classification :.....
9- Cell: .....
10- Stem cells: .....
11- Organ: .....
12- Unicellular organisms: .....
13- Multicellular organisms:.....
14- Tissue :.....

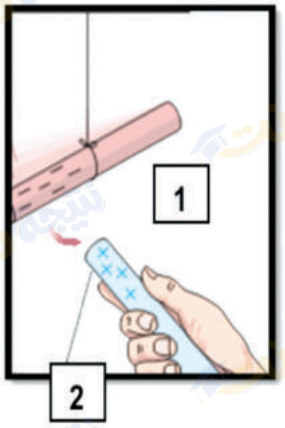
Mention one example of each of the following:

1- The simplest molecule of an organic compound (.....)
2- A molecule containing a single covalent bond (.....)

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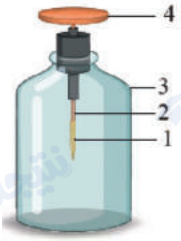
3- A molecule containing a double covalent bond (.....)
4- A molecule containing a triple covalent bond. (.....)
5- A molecule containing an ionic bond. (.....)

Observe the diagram and then answer the following questions:



1- What is the name of rod (1)?
2- What is the type of charge of rod (1)?
3- What is the name of rod (2)?
4- What is the type of charge of rod (2)?
5- What happens when the two rods are brought closer together? ……
6- What happens when the second rod is replaced by another rod of the same type as the first rod and with the same charge? ……
7- What happens when the second rod is replaced by another rod of the same type as the first rod and is not charged? ……

The figure opposite represents a device:
Answer the following questions:



1- What is the name of the device? .....
2- What is it used for? .....
3- Complete the label on the drawing? .....

The following figures represent magnetic field lines, which one represents .....?

1- Magnetic field lines between the poles of two different magnets.
2- Magnetic field lines between the poles of two similar magnets.
3- Magnetic field lines of a magnet.

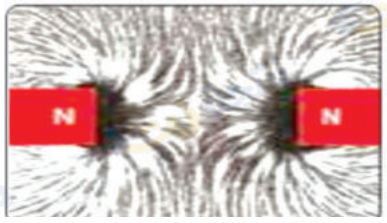


Figure (C)

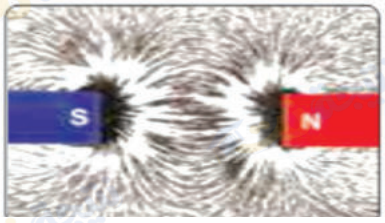


Figure (B)

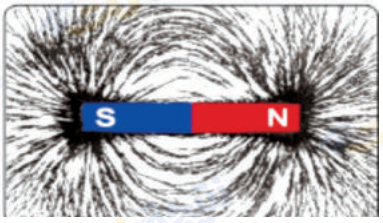
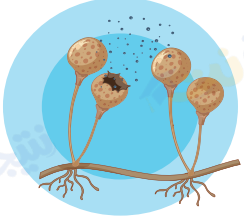


Figure (A)

The opposite figure represents a living organism:



1- What is the name of this organism?
2- What is the classification of this organism?
3- What are the differences between this organism and bacteria?
4- What are the similarities and differences between this organism and yeast fungus?

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lesson two **General characteristics of living organisms** Week .....

Class performance **Date:** / /

Think?

Have you ever thought about the similarities and differences between humans and plants?







- Compare between the general characteristics between plants and humans:

comparison	Human	plant
Nutrition		
Respiration		
transportation		
Excretion		
Movement		

- Compare between photosynthesis and respiration in plants.

photosynthesis	respiration
.....	.....
.....	.....

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Home Work

1- Write the scientific term of:

- Organisms that can makes their own food by itself.
- A vital process by which a plant makes its own food.
- A vital process of get oxygen and get rid of carbon dioxide.
- An organelle in eukaryotes responsible for cellular respiration.
- An organ that transports digested food and oxygen through the blood.
- A tissue that transports water and salts from the roots to all parts of the plant.
- The process of get riding of excess waste from the human body.

2- Write the equations of photosynthesis and respiration and explain the relationship between them.

3- Give reason:

- Prokaryotes are different from eukaryotes.
- Respiration is different in humans than in fish and insects.
- The process of cellular respiration plays an important role for plants.
- In plants, the role of phloem tissue is the opposite of the role of Xylem tissue.

4- What happens when:

- The plant doesn't expos to enough sunlight.
- Mitochondria disappear from eukaryotic cells.

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Lesson three

Microbes

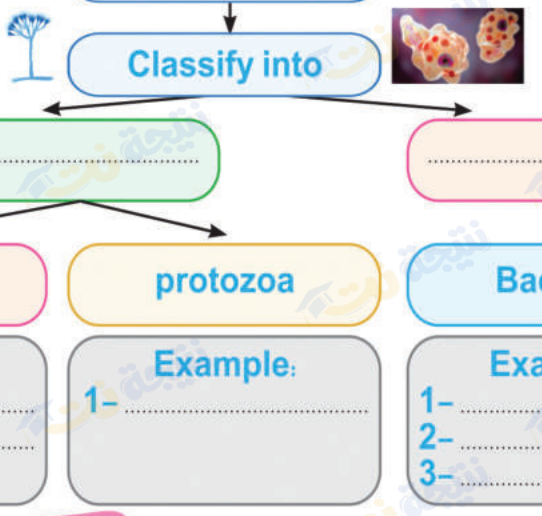
Week .....

Class performance **Date: / /**



Your classmate have a high fever after eating a meal from a street vendor, What happened? .....

Complete the chart in front of you



BACTERIA BUT BENFECIAL

- leguminous plants and Bacteria

The figure in front of you represents .....

Living on .....

Their function .....

Explain how the soil can benefit from them.

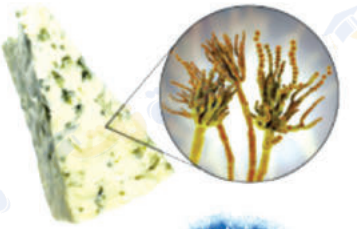
Give another example of a beneficial bacterium. .....



- Cheese and Fungi

(A) - The Name of the fungi in front of you is ……..

Is this fungi beneficial or harmful?.....



(B) - The Name of the fungi in front of you is.....

Discovered by the scientist .....

A substance that extracted from it is.....

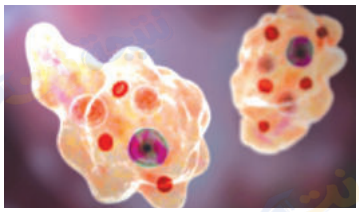
Give another example of another a beneficial fungus .....



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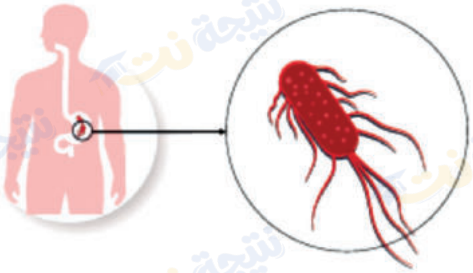
Contaminated food

A) The figure in front of you represents .....



It lives in .....
It is transmitted through .....
It causes ..... disease
From Its symptoms is .....
It is treated using .....

B) The figure in front of you represents .....



It infects .....
It is transmitted through .....
It causes ..... disease
Its symptoms include .....
It is treated by .....

Home Work

Write the scientific term:

- Microorganisms, most of which cant seen by naked eyes. (.....)
- Beneficial bacteria that live on the roots of leguminous plants. (.....)
- Bacteria that increase soil fertility. (.....)
- A type of bacteria that converts lactose sugar into lactic acid. (.....)
- A type of fungus used in making cheese . (.....)
- A type of fungus used in the manufacture of antibiotics. (.....)
- A scientist who extracted penicillin. (.....)
- A type of fungus involved in the manufacture of ethyl alcohol. (.....)

2- Compare dysentery and typhoid disease in terms of causes and symptoms.

3- GIVE REASON

- We put a little sugar to the salt solution when making pickled olive.....
- Penicillium notatum has an important role in the field of medicine.....
- Yeast fungi are used in many industries.....
- The presence of a green color on Roquefort cheese.....

4- What happens when :

- Humans eat ingested food.....
- Harvesting leguminous plants and leaving their roots in the soil.....

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Week assessment (.....)

What is meant by:

1- Prokaryotes .....

2- Eukaryotes .....

3- Classification .....

4- Cell .....

5- Tissue .....

6- Organ .....

7- Unicellular organisms

.....

8- Multicellular organisms

.....

9- Stem cells .....

Give reason:

1- Classifying living organisms according to similarities and differences.

.....

2- Paramecium and Euglena are considered unicellular organisms.

.....

3- Bacteria are considered protozoa.

.....

4- Bacteria are different from Euglena even though they are unicellular organisms

.....

5- The lion is considered a multicellular organism.

.....

Compare between:

1 - Prokaryotes and eukaryotes in terms of: Definition - Characteristics.

.....

.....

2- Animal cell, plant cell and bacterial cell in terms of :

-Cell wall - plasma membrane - central body

- Chloroplasts - Golgi apparatus – vacuoles

.....

.....

.....

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Write the scientific term:

1- A group of similar cells that work together and perform a specific function.
(.....)

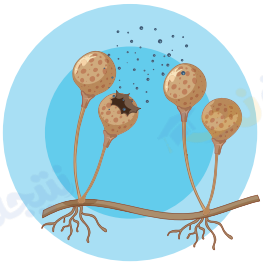
2- A group of different tissues that work together and perform a specific function.
(.....)

3- A group of different organs that work together. (.....)

4 - Simple organisms whose body consists of a single non-specialized cell
(.....)

5- Complex organisms consisting of many cells to distinguish and specialize in their work
(.....)

The figure opposite represents a living organism:



1- name the opposite living organism?

.....

2- classify this organism?

.....

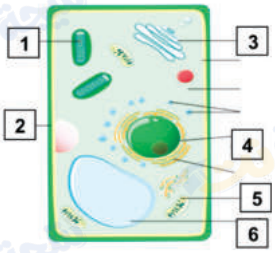
3- What are the differences between this organism and bacteria?

.....

4- What are the similarities and differences between it and the yeast fungus?

.....

The opposite figure represents the structure of a plant cell:



1- Complete the label of the diagram.

.....

2- Which of them are found in rabbit skin tissue cells?

.....

3- Which of them are found in proteolytic cells?

.....

What is meant by each of the following:

1-Autotrophic: .....

2- Heterotrophic organisms .....

3- Movement : .....

4- Microbes .....

5- Streptococcus bacteria .....

6- Root nodules .....

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Give Reasons:

1- Green algae are considered producers.

.....

2- Rabbits are considered consumers.

.....

3- Adding Small amount of Previously Prepared yogurt to milk when making yogurt.

.....

Compare between:

1- Producers and consumers in terms of: Definition - Examples

Compare	Producers	Consumers
Definition		
Examples		

Mention the function of each of the following:

1- chloroplast (.....)
2- xylem vessel (.....)
3- phloem (.....)
4- Arteries (.....)
5- Veins (.....)
6- dialysis machine (.....)
7- Stomata in plants(.....)
8- Lungs in humans (.....)
9- Muscular system in humans (.....)10- Bronchioles (.....)

Write the scientific term:

1- The process by which living organisms obtain the materials used to build their bodies and energy (.....)
2- The substance produced by plants to obtain energy from it. (.....)
3- Two opposing processes that can be transformed into each other.(.....)
4- The process by which plants convert light energy into chemical energy in the presence of water and carbon dioxide. (.....)
5- The process by which living organisms get rid of harmful waste and excess materials. (.....)
6- Cells specialized in opening and closing the stomata in plant leaves.
(.....)
7- Plants that open their leaves during the day and close them at night.
(.....)
8- Plants that follow the movement of the sun as it arises and sets. (.....)
9- living organisms that respire through their skin and lungs. (.....)
10- The organ that get rid of excess water, salts, and urea in the form of urine.
(.....)

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Complete the following statements:

1- All living organisms have general characteristics such as nutrition, ... and ..... excretion and .....

2- The inorganic substances used in photosynthesis are ..... and .....

3- The two substances produced by photosynthesis are ..... and .....

4- Light energy is converted into ..... energy which stored in the ..... material .

5- Carbon dioxide + water $\xrightarrow{\text{sunlight}}$ ..... + ...

6- ..... + ... $\longrightarrow$ carbon dioxide + water + energy

7- .....transport oxygen and digested food from the heart to the rest of the body

8- Veins transport oxygen and digested food from ..... to .....

9 - The plant's transportation system consists of ..... and .....

10- Humans get rid of ..... and ..... through the exhaled air.

11- Plants get rid of excess water and carbon dioxide from .....

12. ..... controls the opening and closing of the stomata.

What happen when:

1- A plant does not receive nitrogen.

2- Not keeping yogurt in the refrigerator.

3- Corsuming food and water contaminated with Salmonella Typhi.

lesson One **The Earth and the solar system** **Week .....**

Class performance **Date: / /**

What do you imagine outside the planet we live on? .....





Observe

the opposite picture and then answer:

1- The solar system is made up of ..... star, and ..... planets revolving around it in different orbits.

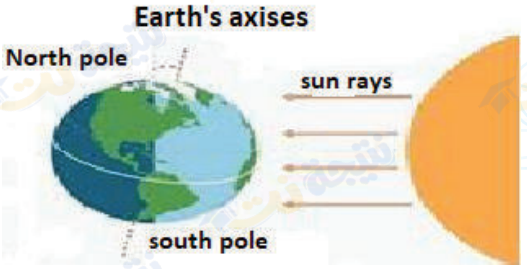
2- The planets of the solar system are divided into inner planets and outer planets. The inner planets are the ..... planets from the sun, while the outer planets are the ..... planets from the Sun.

- Complete the following table:

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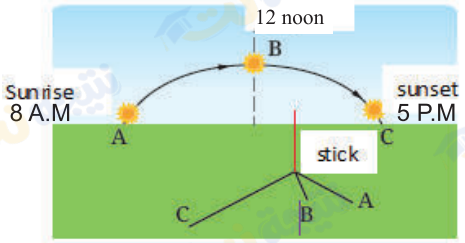
	Inner planets	outer planets
Names of the planets (starting with the closest to the Sun)		
Description		

Observe the opposite image and then answer:



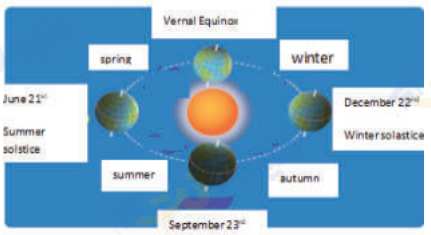
- Is the Earth's axis straight or tilted?
.....
- The Earth's axis extends from
.....
- The tilt of the Earth's axis leads to different
.....
- The rotation of earth around its axes in front of the sun cause ..... and .....
- The result of the revolution of earth around the sun each $365\frac{1}{4}$ day it leads to .....

Observe the opposite figure and then continue:



- The length of the shadow formed by objects during the day varies due to .....
- The length of an object's shadow is greatest at times of ..... and .....
This is because .....
- The length of an object's shadow is smallest at ..... This is because .....

Observe the opposite figure and then answer:



Autumnal equinox

- The north end of the Earth's axis is tilted away from the sun in the ..... season
- The north pole of the earth's axis is tilted toward the sun in the season of .....
- The planting and harvesting seasons of agricultural crops in Egypt vary according to .....
- From summer crops are ..... ,.....and .....but ..... , ... and ..... are classified as of winter crops.

Home Work

- What are the components of the solar system?

- Describe the atmosphere and volcanic activity of the following planets:
Mercury, Earth, Jupiter, Uranus

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Give reason: -The planets of the solar system do not collide with each other as they move around the sun.

- The length of the shadow formed at noon is very short.

What happens when... * Earth rotates on its axis. * Earth's rotation around the Sun.

Week assessment (.....)

Complete the following statements:

1- The solar system consists of …… as a star, It is orbited by …….. Planets revolve around It.

2- The preceding plant of earth closest to the Sun is ……. , followed by .....

3- The crust of the planet ..... Full of craters caused by meteors impacts.

4- The crust of the planet ..... Thicker than the crust of Venus

5- The planets Jupiter and ..... are similar in that they have the same components of the atmosphere in that they have the same components of the atmosphere and do not have .....

6- Mars is known as the planet ..... While Neptune is known as the planet .....

7- The largest planets are ..... And the Earth is in the ..... order in its size.

8- The Earth rotation once around its axis in each .....hours

9-The Earth's axis is tilted at an angle of 23.5 from the line ..... on the plane.

10- The rotation of the Earth on its axis in front of the Sun results in a sequence of ..... and ..... and motion .....

11- The apparent motion of the Sun is the change of ..... from east to west as a result of the rotation of .....

12- The number of planets that have a crust ..... While the number of planets that do not have active volcanoes .....

13- The winter solstice begins on ..... while the…….. solstice begins on September 23

14- The north pole of the Earth's axis is tilted ..... The sun in summer

15- The length of the day and night are almost equal in the summer season. and .....

16- Ancient Egyptians used ..... to determine the time based on the length and direction of the shadow

17- From the summer crops ..... and ..... and watermelons, while oranges and lettuce are crops .....

Give reason:

1- The planets of the solar system do not collide with each other as they revolve around the sun.

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.....

2- The surface of the planet Mercury is full of craters.

.....

3- The atmosphere of the planet Uranus appears in a greenish-blue color

.....

4- There are no volcanoes on the surface of the planet Saturn

.....

5- The different angle of incidence of the sun's rays on different areas of the earth's surface

.....

Compare between:

1- Venus and Saturn in terms of: crust – atmosphere. Volcanic activity

2- The Earth's rotation around the Sun and its rotation around its axis in terms of the result of rotation

3- Winter and summer in terms of: number of hours of daylight and nighttime – and the closets to the Sun

Write the scientific term:

1- The season in which the number of daylight hours is more than in any other season of the year

.....

2- The season in which the number of night hours is more than the number of daylight hours

.....

3- The planet that has a thin crust full of craters

.....

4- A planet composed mainly of oxygen and nitrogen gases .

.....

Correct the mistake in the following sentences :

1- The four planets closest to the sun have thick crusts, except Venus.

2- Jupiter is similar to Mercury and Uranus in terms of atmospheric composition.

3- We can depend on the length of a shadow to determine the time.

4- The Earth revolves around its axis every 365.5 days.

5- The Earth revolves around its horizontal axis every 24 hours.

6- The length of the shadow formed at sunset is the greatest one.

7- Spring begins after the winter solstice.

8- The apparent height of the Sun is lowest in winter.

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9- The alternation of four seasons leads to changes in temperature.

10- The apparent position of the sun in the sky changes from east to west as a result of the Earth's rotation around its axis.

11 - Crop planting seasons vary according to the seasons of the year.

What happen if:

1- The Earth contains oxygen and nitrogen gases

.....

2- The Earth rotates one complete rotation around the Sun.

.....

3- The Earth rotates one complete rotation around its axis.

.....

4- The presence of methane gas among the components of the atmosphere of the planet Uranus

.....

5- The tilt of the Earth's axis towards the Sun once and away from the Sun again

.....

6- The number of hours of day and night is equal

.....

Choose the odd word :

1- Mercury - Mars - Earth - Saturn .

2- A gaseous planet - large in size - no volcanoes - its atmosphere consists of He, H_2.

3- Watermelon - cucumber - zucchini - lettuce.

4- The number of daylight hours is 13 hours - the temperature is high - the axis of rotation tilts towards the sun - the number of night hours is 12 hours

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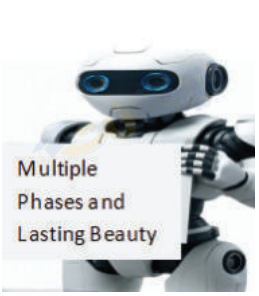
lesson four

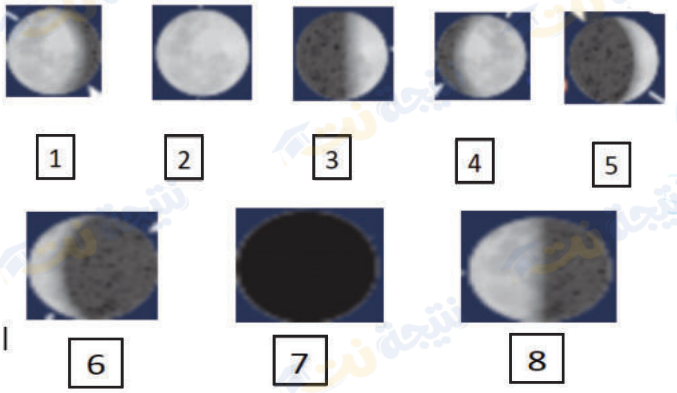
LUNER ECLIPSE

Week .....

Class performance **Date:** / /

Observe the following moon phases and then answer:





- The figure showing the full moon is .....
- The figure showing the full moon is .....
- The figure showing the moon after 7 days is .....
- The figure showing the moon after 17 days is .....
- The figure that shows that the moon has traveled three-quarters of its orbit around the Earth is.....
- The figure showing the moon at the beginning of the Arabic month is .....
- The figure that shows that the moon is in the second crescent phase is .....
- The figure that shows that the moon is in the waxing gibbous phase is .....
- The figure showing the moon in the middle of the Arabic month is .....
- The figure that shows that the moon is located between the earth and the sun is .....
- The figure that shows the moon after 26 days is .....

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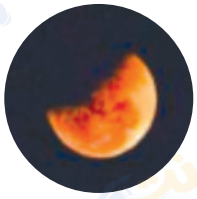
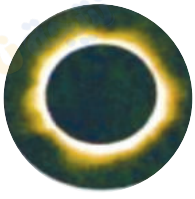
Compare between the following moon phases:

comparison	Day 11	Day 27
phase Name		
(Shade the face of the moon in front Phase of the moon of you to represent the day)		
Percentage of the Moon's orbit around the Earth		

comparison	Eighth day	Day 22
Name the phase		
Phase of the moon (Shade the face of the moon in front of you to represent the day)		
Percentage of the Moon's orbit around the Earth		

comparison	The start of the Arabic month	The end of the Arabic month
Name the phase		
Phase of the moon (Shade the face of the moon in front of you to represent the day)		
Percentage of the Moon's orbit around the Earth		

Observe the following moon phases and then write under each shape what it represents and where the moon is located in each shape:

....

....

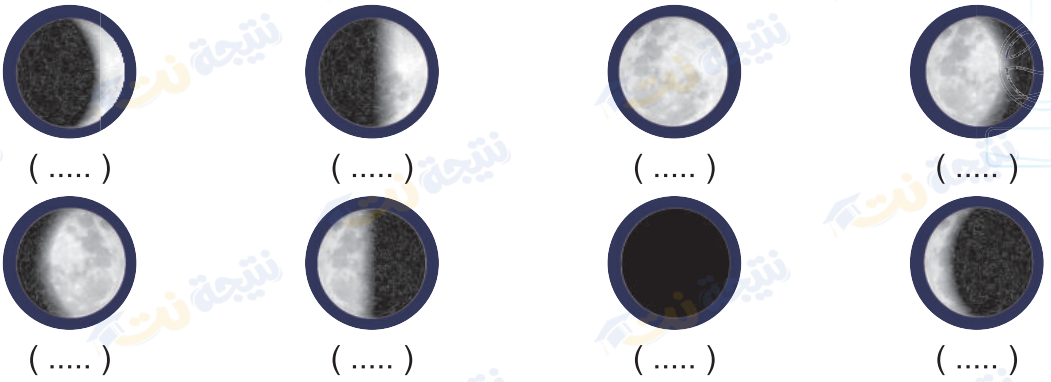
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Home Work

1- Explain what is meant by each of the following:

- Total eclipse. - moon Phases - semi-shadow.

2- Arrange the following phases according to their appearance from the beginning of the Arabic month



(.....) (.....) (.....) (.....)

(.....) (.....) (.....) (.....)

Give reason

1- The moon appears full in the middle of the lunar month.
2- The moon appears as an opaque disk during a total eclipse.
3- The moon goes through a quadrature phase twice during the lunar month.

Week assessment (.....)

What is meant by:

1- Moon..... 2- Phases of the moon .....

3- Shadow..... 4- Semi-shadow.....

5- Transparent objects .....

6- Opaque objects ..... 7- Lunar eclipse .....

8- Total lunar eclipse..... 9- Partial lunar eclipse .....

Give reason:

1- The moon appears illuminated although it is an opaque object
.....

2- The observer on the surface of the earth sees one face of the moon
.....

3-The moon on the 14th day of the lunar month is called a full moon
.....

4-The shadow of a book is formed when placed in front of a lighted light bulb
.....

5-The shadow of a sheet of glass is not formed when placed in front of a lighted light bulb
.....

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6- A partial lunar eclipse occurs

.....

7- A total lunar eclipse occurs

.....

Choose the correct answer

1- The number of phases of the moon during the Arabic month as it revolves around the earth .....

A - 5 B – 6 C - 7 D – 8

2- The moon is a wanning gibbous after it completes ..... of its cycle.

A - ¼ B - 1/2 C - 3/4 D - 1

3- The phase in which the moon appears as an opaque disk is at .....

A - the beginning of the Arabic month B - the middle of the Arabic month

C - the end of the Arabic month D -the 14th day of the Arabic month

4-The moon appears in different phases due to .....

A - the rotation of the Earth around the moon

B - changing the area of the illuminated part of the moon

C - the moon falls in the Earth's shadow area D - the moon falls in the Earth's semi-shadow area

5 - The time of the moon's rotation around the Earth is ..... The time of its rotation around its axis

A - greater than B - less than C - equal to D – half

6 - If the month of Ramadan is on March 11, the moon will become first quarter at ..... March

A - 18 B - 22 C – 25 D - 28

7- When the light side of the moon is facing the sun and the dark side is facing the earth in the phase of .....

A –waxing Gibbous B – new moon C – full moon D – first quarter

8-The phenomenon of a lunar eclipse occurs in .....…….... Arabic month

A – beginning B - end C - middle D - 21st day

9 - ……..…..is considered the closest celestial body to the Earth

A – Venus B - Mars C - Moon D - Sun

10- Objects that allow light to pass through them are called ..... objects

A - transparent B – opaque C - luminous D - black

11 - When the moon enters the area of ..…….... It doesn't considered an eclipse

A - Moon's shadow B - Earth's penumbra

C - Earth's penumbra D - Moon's penumbra

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- Arrange the phases of the moon in ascending order according to the area of the dark part of the moon's face:

(first crescent - the full moon - waxing gibbous - wanning gibbous - new moon)

Third Month exercise

Correct the underlined words in the following statements:

1- Photosynthesis produces **carbon dioxide** and glucose.

2- Adult frogs breathe through **bronchioles and gills**.

3- Humans get rid of excess water and salts through **exhaled air.**

4- **Veins** transport blood rich in oxygen and nutrients from the heart to the rest of the body.

5- Oxygen gas is released during **cellular respiration.**

6- The paramecium is moved by **pseudopods**.

7- **Root-nodular bacteria** belong to eukaryotes.

8- Planets revolve around the sun in **circular** orbits.

9- **The Earth** has a thin crust full of craters caused by falling meteorites.

10- The Earth's rotation on its axis in front of **the Sun leads to the alternation of seasons**.

11- The lowest apparent height of the sun is in **the summer**.

12- **Neptune** is known as the red planet.

13- The moon appears at the beginning of the Arabic month in the form of **a full moon**.

14- The moon rotates around the Earth from **north to south**

Write what the following statements indicate:

1- Tissues in the plant that transport water and salts from the roots to the top of the plant.

.....

2- Openings in the leaves of the plant to get rid of excess water and carbon dioxide.

.....

3- Organisms that cannot be seen with the naked eye.

.....

4- A vital process that enables a living organism to move from one place to another.

.....

5- A fungus used in making bread and ethyl alcohol.

.....

6- An imaginary line that passes through the earth from the north pole to the south pole passing through the center of the earth.

.....

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7- A season of the year in which the day is longer than the night.

.....

8- A gaseous planet revolve around the sun and is known as the blue planet.

.....

9- The phase of the moon in which it appears as a completely opaque disk at the end of the Arabic month

.....

Compare each of the following:

1- Producing organisms and consuming organisms (in terms of definition - examples)

.....

.....

.....

2- Humans, fish and insects. (In terms of the respiratory organ - the medium for obtaining oxygen)

.....

.....

.....

3- Planet Mercury and planet Earth (in terms of atmospheric components - volcanic activity)

.....

.....

.....

4- Total eclipse and partial eclipse

.....

.....

.....

Give Reasons for the following:

1- Rabbits are consumers.

.....

2- Green algae are producers.

.....

3- The pathway of food in the digestive system is not a closed pathway.

.....

4- Plants and green algae perform photosynthesis.

.....

5- Green plants need nitrogen to grow.

.....

6- The planets of the solar system do not collide with each other as they orbit the sun.

.....

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7- The length of an object's shadow is the shortest at the noon.

.....

8- The atmosphere of Uranus appears greenish-blue in color.

.....

9- The moon appears illuminated even though it is an opaque object.

.....

10- The appearance of moon phase during the lunar month.

.....

What happens when:

1- Plant leaves do not contain chlorophyll.

.....

2- Leaving the roots of leguminous plants in the soil after harvesting them.

.....

3- Not keeping yogurt in the refrigerator.

.....

4- Adding a spoonful of sugar to the brine used to make pickled olives.

.....

5- The moon falls completely in the shadow of the earth.

.....

6- The moon falls completely in the penumbra of the earth.

.....

What is meant by?

1- Cellular respiration.

.....

2- Microbes.

.....

3-Inner planets.

.....

4- outer planets.

.....

5- Sundial.

.....

6- Lunar eclipse.

.....

7- Penumbra.

.....

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What is the importance of each of:

1- Guard cells in the plant leaves.

.....

2- Chloroplasts in the plant.

.....

3- Xylem and phloem in the plant.

.....

4- Kidney dialysis machine.

.....

5- decomposition bacteria.

.....

6- lactic acid bacteria.

.....

7- Yeast fungus.

.....

8- Penicillium notatum fungus.

.....

Answer the following questions:

1- What are the substances that the plants use it in the photosynthesis process?

.....

2-What are the structure of the plant transport system?

.....

3-What are the health habits that should be followed to protect ourselves against diseases?

.....

4-What is the difference between the components of the atmosphere of Saturn and Uranus?

.....

5- Arrange the following planets of the solar system in ascending order from the sun: (Mars - Uranus - Mercury - Jupiter - Venus)

.....

6- What is the location of the moon when it is appears as full moon (in relation to the sun and the earth)?

.....

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GENERAL TESTS

Model (A)

Answer the following questions

Question 1

a - Choose the correct answer:

1 - Element (2311Na) is located in ..... of the periodic table

A - first period and third group B - third period and first group

C - second period and third group D - second period and fourth group

2 - ……. is considered Pure substance that cannot be analyzed into simpler substances A - element B – mixture C - solution D – compound

B -Give reasons for the following:

1- The bond in the oxygen molecule is double covalent

.....

2- The nucleus of the atom is positively charged

.....

3- Body weight changes from planet to another.

.....

4- Ricfort cheese is characterized by its green color and distinctive taste.

.....

Question 2

A- Complete the following statements:

1- ..... Magnetic poles are repel while the different magnetic poles are ……each other.

2- Night and day alternate due to the Earth's rotation around ……, while the seasons alternate due to the Earth's rotation around .....

B - Mention the importance of each :

1- Helium gas: .....

2- Vitamin D: .....

3- Tides: .....

4- Gills: .....

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Question 3 :

A. Correct the underlined items:

1- Element (X) has a nucleus containing 39 nucleons and the number of neutral particles is (20), so it has an atomic number of 20. (----------)

2- The melting point of ionic compounds is low. (----------)

B. What happen if:

1- A charged object touches the disk of a electroscope.

.....

2- Adding a spoonful of sugar to the brine used to make pickles

.....

3- Absence of stomata in plant leaves.

.....

4- The moon is completely in the Earth's penumbera.

.....

Fourth question :

A – Choose the odd word then write what relation between the rest words:

1- Magnetic needle - horseshoe magnet - magnetic stone - magnetic bar (.....)

2- wood - glass - copper - paper (.....)

B - Compare between:

Point of comparison	paramecium	Bacteria
Similarity		
Difference		

Point of comparison	Earth planet	Neptune planet
Crust		
Volcanic activity		

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Model (B)

Answer the following questions

Question1:

A– Choose the correct answer:

1 - Elements of alkai metal are .....

A - monovalent B – divalent C - trivalent D – quaternary

2 - The bond in the sodium chloride molecule is .....

A - mono-covalent B - di-covalent C - tri-covalent D – ionic

B – Give reason for the following:

1- The atom is electrically neutral in its normal state.

.....

2- Party balloons and blimps are filled with helium gas.

.....

3- The mass of a body does not change from place to another.

.....

4- Bean plants are autotrophs.

.....

Question 2 :

A - Complete the following statements:

1- Magnetic field lines start from the ..... pole of the magnet and end at the ..... pole

2- The nearest inner planets to the sun are ..... and ....

B - What are the importance of each of :

1- Nitrogen gas: ----------.

2- Voltammeter Hoffman : ---------- .

3- Coulomb Meter : ----------

4- Penicillium notatum fungus: ----------

Question 3 :

A- Correct the underlined words:

1- The element potassium is symbolized by the symbol P. (----------).

2- The valence of an element can be known from the number of protons in the outer energy level.(----------)

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B - What is the result of:

1- There are gravitational forces between the Earth and the Moon.

.....

2- Positively charged rod of glass are brought close to freely suspended rod of ebonite.

With a negatively charged

.....

3- The genetic material in the paramecium surrounded by a nuclear membrane that separates it from the cytoplasm.

.....

4- Part of the moon is located in penumbra the Earth.

.....

Question 4 :

A- Choose the odd word and then write what relation between the rest of the words:

1- Elastic forces - Collision forces - Gravitational forces - Frictional forces.

.....

2- Iron - Diamond - Nickel – Cobalt

.....

.....

Point of comparison	Human	Fishes
Respiratory organ		
oxygen supply medium		

B. Compare between:

Point of comparison	Venus planet	Uranus planet
Atmosphere		
Volcanic activity		

Model (C)

Answer the following questions

Question 1:

A- Choose the correct answer:

1 - An atom ..... in which the number of protons is half the number of neutrons.

a - $^{1}_{1}H$ b - $^{1}_{2}H$ c - $^{3}_{1}H$ d - $^{16}_{8}O$

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2 - The two groups (1A and 2A) are from the elements found in ..... block.

A – s B - p C – d D - f

B –give reason for the following:

1- Organic compounds are known as carbon compounds.

.....

2- The bond in the hydrogen molecule is single covalent.

.....

3- The weight of an object on the surface of the moon is less than its weight on the surface of the earth.

.....

4- Paramecium is considered a eukaryote.

.....

Question 2

A- Complete the following statements:

1- Iron is a magnetic material while ..... and ..... are non-magnetic materials

2- ..... is called the blue planet while Mars is called the ..... planet

B - Mention the importance of each of :

1- Egyptian blue dye: ----------

2- Stainless steel alloy: ----------

3- Lightning rod ..: ----------

4- Bronchioles: ----------

Question 3 :

A- Correct the underlined words:

1- Moseley's periodic table are arranged element in descending order according to their atomic numbers.

2- A positive ion is an atom of an element that has gained one electrons or more .

B- What are the result of:

1- Bringing the scraps of paper closer to a glass stem that has been rubbed with silk.

.....

2- Plant leaves do not contain chloroplasts.

.....

3- Not keeping yogurt in the refrigerator.

.....

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4- The moon falls completely in the Earth penumbra

.....

Question 4:

A – Choose the odd word and then write what the relation between the rest of the words:

1- Lines starting from the North Pole - imaginary lines that do not intersect - has more density at the two poles - lines starting from the South Pole.

.....

2- Mass - volume - weight - gravitational field.

.....

B – Compare between

Point of comparison	Dysentery disease	Typhoid disease
Causing microbe		
Where the microbe is located		

Point of comparison	Mars	Jupiter
Crust		
Atmosphere		

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