

1. Short answer questions:**i. What is an element?**

An element is a pure substance consisting of only one type of atom. Elements are the fundamental building blocks of matter. Each element has unique properties and is represented by a specific chemical symbol

ii. What is an alloy?

An alloy is a mixture of two or more elements, where at least one element is a metal. Common examples of alloys include brass (copper and zinc) and steel (iron and carbon)

iii. Define compound.

A compound is a substance composed of two or more different elements chemically bonded together in fixed ratios. The elements in a compound lose their individual properties. Water (H₂O) and table salt (NaCl) are examples of compounds.

iv. What is sublimation?

Sublimation is a process in which a substance changes directly from a solid to a gas without passing through the liquid phase.

2. Long Questions**i. What is the composition of air?**

The composition of air consists mainly of nitrogen (about 78%), oxygen (about 21%), and trace amounts of other gases, including argon, carbon dioxide, neon, helium, methane, krypton, hydrogen, xenon, and ozone. Water vapor is also present, varying in concentration depending on the location and environmental conditions.

ii. Why is an alloy considered to be a mixture not a compound?

An alloy is considered a mixture, not a compound, because it is a blend of different metals or a metal with a non-metal. In alloys, the components retain their original properties, and their proportions can vary, making it a mixture. Compounds, in contrast, involve elements chemically bonded in fixed ratios, forming a new substance with distinct properties.

iii. What are the differences between a compound and a mixture? Give two examples.

Compound	Mixtures
Compounds are substances which can be formed by chemically combining two or more elements.	Mixtures are substances that are formed by physically mixing two or more substances.
Its constituents can be separated by chemical methods only.	Its constituents can be separated by physical methods.
It is always homogeneous in nature	It can be homogeneous or heterogeneous
Examples	Examples
<ul style="list-style-type: none"> • Water • Sodium chloride 	<ul style="list-style-type: none"> • Air • Salad

iv. Write the process of separation of salt from water.

To separate salt from water, you can use the simple process of evaporation. Pour the saltwater into a container and place it in a sunny or warm area. As the water evaporates, it leaves the salt behind. Once all the water has evaporated, you are left with salt crystals in the container, which can be easily collected for use.

v. How is chromatography carried out?

Chromatography is done by placing a small amount of the mixture (like ink or colored substances) on a special paper or a thin layer of material. This paper or material is then dipped in a solvent (like water or alcohol). As the solvent moves up the paper, it carries the different components of the mixture at different rates. This separation creates visible bands of individual substances on the paper, allowing scientists to analyze and identify them based on their positions

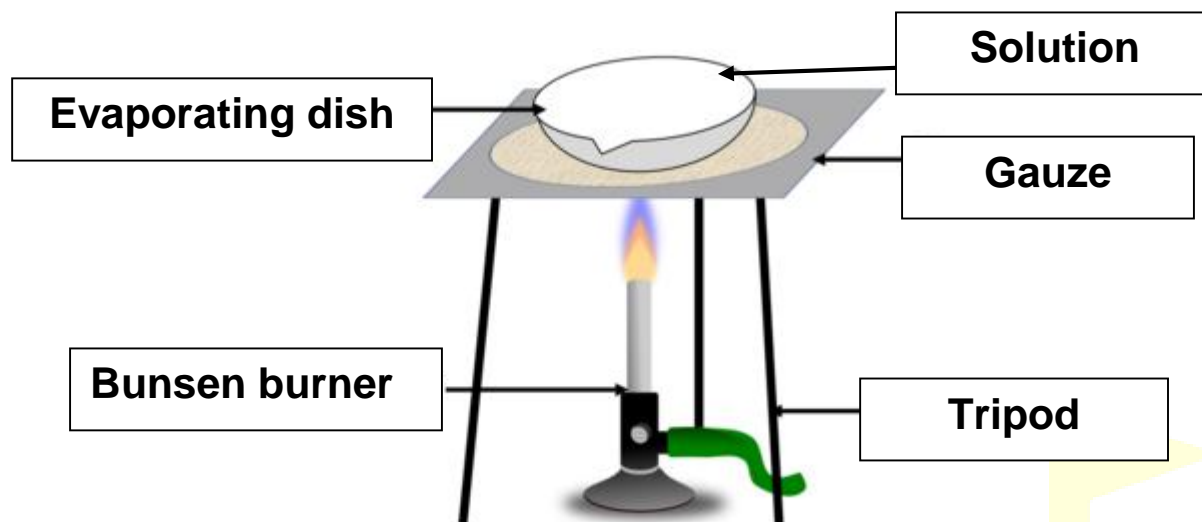
3. Choose the correct answer

i. A mixture is considered homogenous if:			
a) It does not have a uniform composition throughout			
b) It has different properties in different parts of the mixture			
c) It has a uniform composition			
d) It has solid particles in liquid			
ii. Which of the following is classified as a mixture?			
a) Iron	b) Chlorine	c) Steel	d) Mercury
iii. Which of the following cannot be used to separate a mixture?			
a) Chromatography	b) Sublimation	c) Distillation	d) Decomposition
iv. The most common element in dry air is			
a) Oxygen	b) Nitrogen	c) Water vapour	d) Carbon dioxide
v. A mixture of sugar with water is an example of			
a) Homogeneous	b) Heterogeneous	c) Alloy	d) Suspension

4. Fill in the blanks

- i. An element is made up of **one** type of atoms.
- ii. Air is a **mixture** of gases.
- iii. The most abundant gas in the atmosphere is **nitrogen**.
- iv. Without **oxygen** from the air, most living things would die.
- v. Distillation is used to separate the **components** from a solution.
- vi. A solid that dissolves in a liquid to form a solution is called **solute**.

5. Label the following diagram:



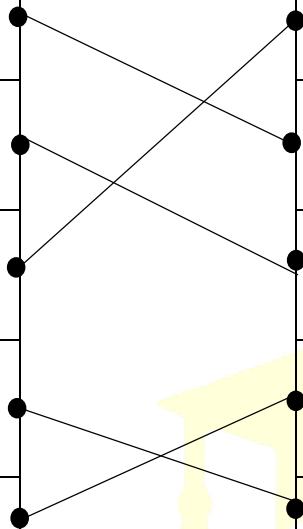
6. True/False

- i. Mixtures can be separated into their components by physical means.
- ii. The components of a mixture always retain their individual properties.
- iii. In a solution, the solute is the substance in greater quantity.
- iv. Heterogeneous mixtures do not have a uniform composition throughout
- v. Air is an example of a mixture, consisting mainly of nitrogen, oxygen, and other gases.

T
F
F
T
T

7. Match the statements

A	B
Alloy	Separation method based on settling
Tyndall effect	Mixture of metals with enhanced properties
Decantation	Scattering of light by colloidal particles
Solute	Ability of a solution to conduct electricity
Conductivity	Substance being dissolved



8. Jumbled words.

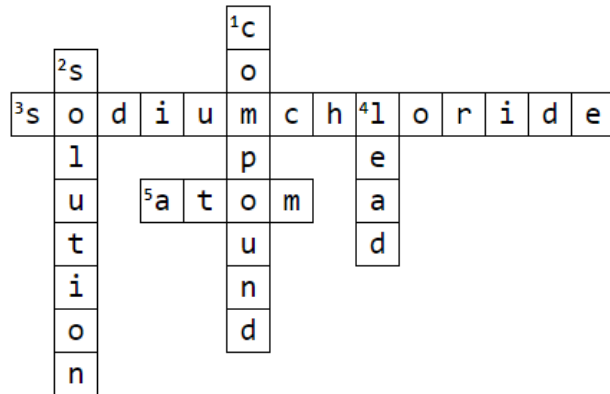
Jumbled words	Arranged words
alldtyn	Tyndall
tteracs	Scatter
vitytiduccon	Conductivity
quenitech	Technique
tationcande	Decantation

9. Word Search

Aqueous	Emulsion	Saturation	Precipitate	Collision
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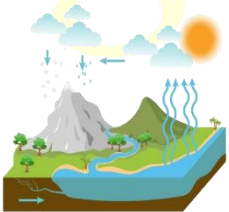
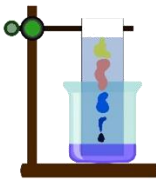
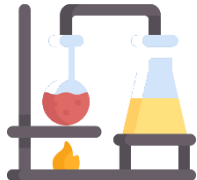
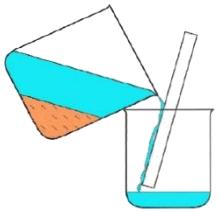
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Q	P	C	Q	L	Y	I	F	L	A	G	P	O	L	E
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O	G	O	L	S	T	O	M	A	C	C	I	I	R	M
U	Z	H	S	A	T	U	R	A	T	I	O	N	A	E
T	Y	Y	I	G	U	T	N	G	T	P	P	E	V	N
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M	I	R	N	V	W	G	U	L	L	T	T	T	T	A
I	S	A	J	G	L	A	N	D	S	A	L	L	Y	R
L	P	T	C	Y	A	P	P	E	N	T	I	X	L	Y
C	O	L	L	I	S	I	O	N	F	E	U	E	S	K

10. Cross words



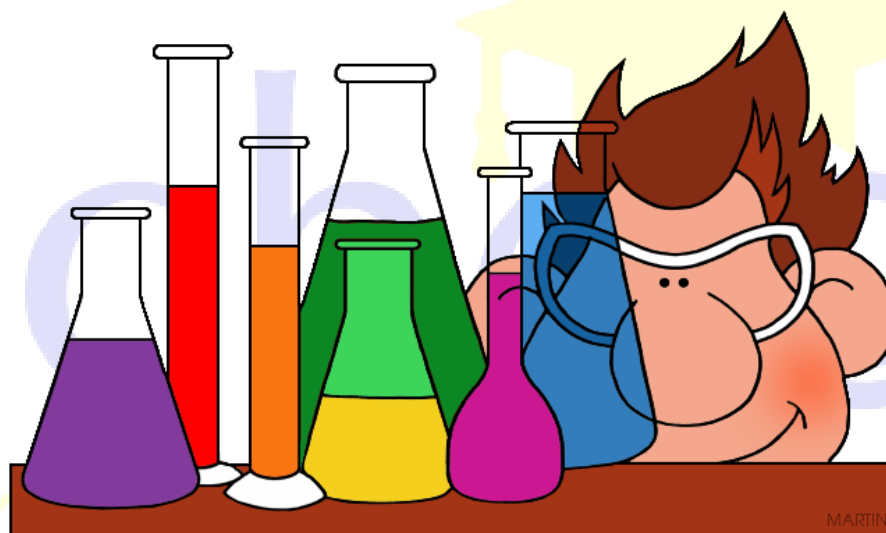
Across	Down
3. compound found in table salt	1. mixture of two or more elements
5. the basic unit of an element	2. solute, solvent
	4. metal used in pencils

11. Drag and drop

				
Filtration	Evaporation	Paper chromatography	Distillation	Decantation

Method	Use
Filtration	Separating solid-liquid.
Evaporation	Liquid to gas.
Paper chromatography	Separation through absorption.
Distillation	Boiling point separation.
Decantation	Pouring off liquid.

12. Comprehension



Mixtures are combinations of different substances that come together but don't chemically react. They can be found all around us, like the air we breathe and the food we eat. There are two types of mixtures: homogeneous, where everything looks the same, like sugar dissolved in water, and heterogeneous, where you can see the different parts, like a bowl of cereal. We use various methods, such as filtering or heating, to separate these mixtures and get back the original substances. Understanding mixtures helps us make things, like cooking recipes or even creating new materials. So, next time you enjoy a smoothie or look at the clouds in the sky, remember that mixtures are part of our daily lives, making things interesting and diverse.

i. What are mixtures?

Mixtures are combinations of different substances that come together but don't chemically react.

ii. How many types of mixtures are?

There are two types of mixtures

iii. What are the methods to separate mixtures?

We use various methods, such as filtering or heating, to separate these mixtures and get back the original substances.

