



## Matter

### EXERCISE- I

**Question 1** Define matter.

**Answer:** Anything that has mass and occupies space is called matter.

**Question 2**

**What are the two main types of matter? Give two examples for each type.**

**Answer:** The two main types of matter are:

1. **Living matter:** The earth is home to all kinds of plants and animals. They can grow, move and reproduce on their own. Examples: Plant, lotus, animals, human etc.
2. **Non-living matter:** Most of the matter in the universe is non-living. It means that it does not grow, move or reproduce on its own. It can be natural or manmade.

**(a) Natural matter:** It occurs in nature and can be used to make more useful substances, e.g., wood, coal, silk, water, stone, cotton, jute, cereals, fruits, etc.

**(b) Man-made matter:** It is produce artificially from natural matter, e.g., plastics, soaps, detergents, medicines, glass, nylon, steel, ceramic, etc.



### Question 3

**Differentiate between living and non-living matter.**

**Answer: Living matter:**

1. The earth is home to all kinds of plants and animals. They can grow, move and reproduce on their own.
2. It is natural only.

**Non-living matter:**

1. Most of the matter in the universe is non-living. It means that it does not grow, move or reproduce on its own.
2. It can be natural or manmade.

### Question 4

**Select natural and man-made matter from the following list: Wood, plastic, silk, medicines, detergents, coal, water, ceramic, cotton, glass, nylon, fruits.**

**Answer: Natural matter:** Wood, silk, coal, water, fruits.

**Man-made matter:** Plastic, medicines, detergents, ceramic, cotton, glass, nylon.

## EXERCISE-II

### Question 1

**Name the smallest particle from which matter is made up.**

**Answer:** The smallest particle from which matter is made up is atom.

### Question 2

**What are molecules?**

**Answer:** Molecules are the smallest unit of matter. They exhibit all the properties of that kind of matter and is capable of independent existence.

### Question 3

**Give one difference between atoms and molecules.**

**Answer:** Atoms may or may not have independent existence, while molecules have independent existence.

### Question 4 Define:

**(a) Intermolecular force of attraction.**

**(b) Intermolecular space.**

**Answer:**

**(a)** The molecules of matter are always in motion and attract each other with a force, and this force is called intermolecular force of attraction due to which they are held together.

**(b)** The molecules can move only when there are gaps or space between them, this space is called intermolecular space.



### Question 5

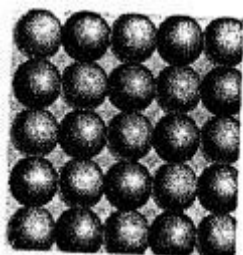
Name the three states of matter and define them.

#### Answer:

The three states of matter are:

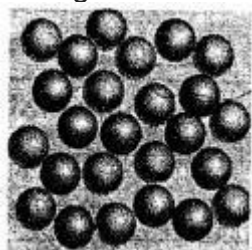
1. Solid State
2. Liquids
3. Gases :

**Solid State:** The molecules are very close to each other hence intermolecular spaces are small and intermolecular force is strong.

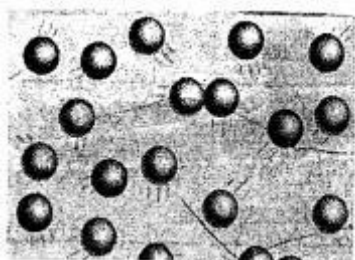


Hence solids have definite volume, rigid, retain definite shape and are incompressible.

**Liquids:** The molecules are less closely packed have more intermolecular spaces than solid, less strong force than solids.



Hence liquids have definite volume but no definite shape. They take the shape of container in which they are put.



**Gases:** The molecules in the gases are far apart with weakest force of attraction. Hence gases have neither definite volume nor definite shape but easily compressible.

### Question 6

What are fluids? Give two examples

#### Answer:

Substances that can flow are called fluids. Both gases and liquids are fluids, e.g. gases (carbon dioxide, hydrogen), liquids (water, petrol and sulphuric acid).



**Question 7**

Classify the following into solids, liquids and gases.

Oxygen, milk, common salt, wax, stone, L.P.G, carbon- dioxide, sugar, mercury, coal, blood, butter, copper, coconut oil, kerosene.

**Answer:**

<b>Solids</b>	<b>Liquids</b>	<b>Gases</b>
Common salt	Milk	Oxygen
Wax	Mercury	L.P.G.
Stone	Blood	Carbon dioxide
Sugar	Coconut oil	
Coal	Kerosene	
Butter		
Copper		

**Question 8 Give reasons**

(a)Liquids and gases flow but solids do not?

**Answer:** The molecules of liquids and gases are far apart i.e. have more gaps, intermolecular attraction force is very less as compared to solids, hence liquids and gases can flow but solids do not as gaps\*in solid molecules is less and molecular force of attraction very strong.

(b)A gas fills up the space available to it.

**Answer:** Intermolecular force of attraction is least and intermolecular spaces are very large, hence gases can fill up the space available to them.

(c)The odour or scent spreads in a room.

**Answer:** Scent fumes (molecules) being gases fill the spaces between air molecules and the Molecules of air fill the spaces between scent molecules due to diffusion, fumes spread into a room. or Due to inter-mixing of scent molecules and air molecules, scent fumes spread into the room.

(d)We can walk through air.

**Answer:** The molecules of air are far apart i.e. large gaps and we can walk through air easily.

(e)Liquids have definite volume but no definite shape.

**Answer:** The molecules of liquid are loosely packed and intermolecular force of attraction is small but number of molecules in it remains the same. Hence liquids have definite volume but no definite shape.



(f) When a teaspoon of sugar is added to half a glass of water and stirred, the water level in the glass remains unchanged.

**Answer:** When a teaspoon of sugar is added to half a glass of water and stirred, the water level in the glass remains unchanged because the sugar particles are adjusted between the water molecules as inter-molecular gaps are more in liquids.

(g) When an empty gas jar is inverted over a gas jar containing a colored gas, the gas also spreads into the empty jar.

**Answer:** This is because Gases can diffuse or flow in all directions.

(h) A red ink drop added to small amount of water in a glass turns the water red in some time.

**Answer:** When we put a drop of red ink in a glass of water, its particles diffuse with particles of water slowly but continuously and the water turns red.

**Question 9 Define:**

**(a) Cohesive force:** The force of attraction between particles of the same substance is called cohesive force.

**(b) Diffusion:** The phenomenon of intermixing of particles of one kind with another kind is called diffusion.

**(c) Brownian movement:** The zig-zag motion of particles suspended in a medium is called Brownian movement

**Question 10**

**Why is an egg kicked out of a bottle when air is blown inside the bottle?**

**Answer:** When we invert the bottle and blow air into the bottle through the side opening. It creates high pressure inside the bottles and the egg is kicked out of the bottle.

