

PONY

سلسلة كتب الاستاذ

# SCIENCE

2023



FINAL

REVISION

5

PRIMARY  
FIRST TERM

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# Concept

# 1.1

Q1

Choose the correct answer:

- The ..... absorb(s) water and salts from the soil.  
a. stem                      b. leaves                      c. **roots**
- The ..... deliver(s) water and salts from the roots to the plant leaves.  
a. **stem**                      b. leaves                      c. roots
- The process of photosynthesis occurs in the .....  
a. stem                      b. flowers                      c. **leaves**
- The needs of plants and animals are similar in all the following, except .....  
a. water                      b. air                      c. **method of obtaining food**
- ..... is one of the basic needs of plants.  
a. Soil                      b. **Air**                      c. Oxygen
- The plant makes its food, which is ....., through the process of photosynthesis.  
a. **sugar**                      b. protein                      c. seeds
- Root hairs help in ..... the amount of water that the plant can take from the soil.  
a. decreasing                      b. **increasing**                      c. not changing
- Phloem vessels carry glucose down from the ..... to the rest of the plant parts.  
a. **leaves**                      b. stems                      c. roots
- During photosynthesis, plants release ..... into the air so that we can breathe.  
a. carbon dioxide                      b. **oxygen**                      c. sugar
- Xylem vessels are tubes that allow water to move ..... from the roots to other parts of the plant.  
a. down                      b. **up**                      c. in its place
- ..... is a component within a plant that absorbs sunlight during photosynthesis.  
a. **Chlorophyll**                      b. Stomata                      c. Xylem

- 12 Air passes through small openings in the leaves of the plant called .....  
a. xylem                      b. chlorophyll                      c. **stomata**
- 13 The potato plant is known to have a/an ..... stem that extends underground.  
a. **tuber**                      b. extension                      c. climber
- 14 The blood rich in oxygen moves inside the body from the heart to the body's organs through the .....  
a. phloem                      b. veins                      c. **arteries**
- 15 In the process of photosynthesis, light energy is converted into ..... energy.  
a. gravitational                      b. thermal                      c. **chemical**
- 16 The process of transporting seeds from one place to another is called .....  
a. seed germination                      b. transpiration  
c. **seed dispersal**
- 17 The blood rich in carbon dioxide returns to the heart through the .....  
a. arteries                      b. **veins**                      c. phloem
- 18 The human transportation system is called the ..... system.  
a. digestive                      b. **circulatory**                      c. respiratory
- 19 The plant absorbs ..... gas during the process of photosynthesis.  
a. oxygen                      b. **carbon dioxide**  
c. nitrogen
- 20 The ..... is considered an organ of the circulatory system.  
a. skin                      b. **heart**                      c. brain
- 21 The heart consists of ..... chambers.  
a. three                      b. **four**                      c. five
- 22 There are several types of leaves, including wide flat leaves, such as the leaves of .....  
a. **banana trees**                      b. pine trees                      c. grapes

## Q2 Put (✓) or (X):

- 1 The roots absorb light from the Sun. (X)
- 2 Soil is considered a basic need for plant growth. (X)
- 3 The plant absorbs water from the soil through the root. (✓)
- 4 The plant uses natural resources to grow and flourish. (✓)
- 5 Photosynthesis occurs in plant seeds. (X)
- 6 Chlorophyll gives the plant its distinctive green color. (✓)
- 7 The xylem carries glucose from the leaves to the rest of the plant. (X)
- 8 A plant does not need sunlight in the process of photosynthesis. (X)
- 9 The arteries and veins in the human body are similar to the vessels of xylem and phloem in plants that transport water and food. (✓)
- 10 Glucose provides the plant with the energy needed for growth and survival. (✓)
- 11 Blood moves in the arteries and veins in two directions. (X)

## Q3 Mention the scientific term:

- 1 They're stems that extend horizontally on the surface of the Earth and help in the formation of new plants, such as the strawberry plant. (Runner stems)
- 2 They're small openings (holes) in the leaves of the plant through which air passes. (Stomata)
- 3 It's a process that occurs inside the leaves of the plant to make its food. (Photosynthesis process)
- 4 They're thick and solid stems, such as the roots of trees and shrubs. (Woodstems)
- 5 It's a substance responsible for the green color of the plant. (Chlorophyll)
- 6 They're vessels in the plant that are responsible for transporting nutrients from the leaves to all parts of the plant. (Phloem)
- 7 They're vessels that transport water and nutrients from the roots to all parts of the plant. (Xylem)
- 8 They're vessels that transport the blood rich in carbon dioxide and a little oxygen and nutrients from parts of the body to the heart. (Veins)
- 9 It's a group of vessels (tubes) that transport important nutrients in one direction between parts of the plant. (Plant transport system)

- 10 They're small, dark parts located in the middle of the sunflower. (Seeds)
- 11 They're the reproductive parts of the plant. (Flowers)
- 12 It's the process of transferring seeds from one place to another. (Seeds dispersal)

#### Q4 What is meant by:

- The process of photosynthesis.

It is the process through which the green plants (leaves) absorb sunlight to make their own food

Sunlight + Carbon dioxide + Water → Oxygen + Sugar

#### Q5 Complete the following sentences:

- 1 Plants get water and nutrients from the soil.
- 2 The roots help the plant get water from the soil.
- 3 Air and water are considered basic needs for the growth and survival of living organisms.
- 4 The energy source of a plant is glucose sugar.
- 5 During photosynthesis, light energy is transformed into chemical energy.
- 6 The plant needs carbon dioxide gas, water, and sunlight to carry out the photosynthesis process.
- 7 If the appropriate conditions are available for the seeds, they grow and form sprouts.
- 8 Plant cells depend on glucose sugar as a source of energy and growth.
- 9 The process of reproduction is the production of new individuals of the same species.
- 10 Flowers in plants perform the function of reproduction.
- 11 Coconut seeds are transmitted by water.
- 12 Oxygen gas is produced through the process of photosynthesis and humans use it for breathing.
- 13 The transport system in plants is similar to the circulatory system in humans.
- 14 There are three types of blood vessels in the human circulatory system: arteries, veins, and blood capillaries.

**Q6 State the scientific reason:**

- 1 Plants need sunlight to survive.  
**To make their own food by the photosynthesis process.**
- 2 The human body needs water and food daily.  
**To get energy to do life activities.**
- 3 The little squirrel needs food.  
**To get energy to grow and survive.**
- 4 Sugar is not a basic need for plants.  
**Because plants can make it during the photosynthesis process.**
- 5 There are root hairs in the plant root.  
**To increase the amount of absorbed water and nutrients from the soil.**
- 6 A plant does not grow well in a paper towel.  
**Because it needs nutrients from the soil to grow well.**
- 7 Dandelion seeds spread in the presence of wind.  
**Because they are light seeds.**

**Q7 What happens if:**

- 1 A green plant is placed in a dark place for a week?  
**It will die because it can't make its own food by the photosynthesis process.**
- 2 A plant obtains natural resources?  
**It will grow well and survive.**
- 3 A plant does not have roots?  
**It can't absorb water and nutrients from the soil and can't be fixed in the soil.**
- 4 A plant does not have natural resources?  
**It can't make its food through the photosynthesis process, so it will die.**
- 5 A green plant is placed in a dark place for a period of time?  
**It will die because it can't make its own food by the photosynthesis process.**
- 6 The roots disappear from a plant?  
**The plant can't absorb water and nutrients from the soil.**

- 7 Plants disappear from the surface of the Earth?

All living organisms will die because they can't breathe in oxygen gas that is produced from the photosynthesis process.

- 8 The seed of a plant fall on an unsuitable environment?

It can't germinate to form a new plant.

- 9 A plant is left without water for long periods?

It will die because it can't make its own food by the photosynthesis process.

- 10 A seed of a plant falls on a suitable environment?

The seed will grow (germinate) to form a new plant.

Q8

Answer the following questions:

- 1 What role do the leaves play in helping a plant get food?

Leaves make food for the plant through the photosynthesis process.

- 2 What role does the stem play in helping a plant get food?

It transports water and nutrients from the roots to the leaves.

- 3 What role do the roots play in helping a plant get food?

They absorb water and nutrients from the soil and fix the plant in the soil.

- 4 The plant stem has many different shapes, mention them.

Wood stem - upright stem - climb stem - runner stem - tuber stem

- 5 What are the differences between the needs of humans and plants?

Humans Needs	Plants Needs
Food Water Air Shelter	Sunlight Air Water Space to grow Nutrients

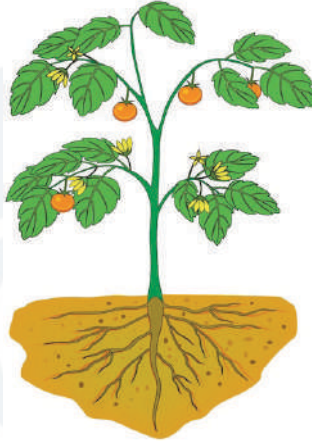
- 6 What does the picture in front of you indicates?

**Germination process**



- 7 Put each word in its correct place.

**Roots – Stem – Leaves – Flower**



- 8 Look at the two pictures and answer:  
What are the types of tree leaves in front of you?



**Wide leaves**



**Needle leaves**

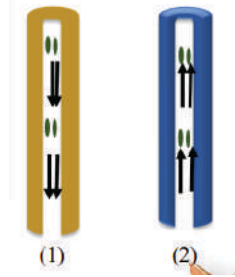
- 9 In front of you is a plant whose shape has changed from picture (1) to picture (2). What is the reason for that?



**Because without access to carbon dioxide, sunlight, or water, a plant cannot carry out photosynthesis, so it will die.**

10 Look at the pictures in front of you, then complete:

- The xylem vessel is represented by shape (2) and it carries **water and nutrients**.
- The phloem vessel is represented by shape (1) and it carries **plant food (glucose sugar)**.



11 Look at the picture in front of you.



- What is the name of the small, dark things in the middle of the flower? **The seeds**
- What is their importance to plants?



**It is the reproductive part of the plant.**

**Because they help the plant reproduce by producing seeds.**

12 Notice the pictures of the following seeds and complete the table:

Seed	Dispersal Method
	<b>By wind</b>
	<b>By wind</b>

# Concept

# 1.2

Q1

Choose the correct answer:

- 1 ..... belong(s) to the nonliving components of the ecosystem.  
a. Animals      b. Plants      c. Soil      d. Insects
- 2 ..... are among the organisms that produce food.  
a. Animals      b. Plants      c. Soils      d. Humans
- 3 Fungi are found in the ..... of the food chain.  
a. beginning      b. middle      c. end      d. start
- 4 ..... obtain energy directly from the Sun.  
a. Plants      b. Humans      c. Animals      d. Insects
- 5 Which of the following represents a correct food chain?  
a. Hawk → Grass → Bacteria → Rabbit → Snake.  
b. Grass → Rabbit → Bacteria → Hawk → Snake.  
c. Grass → Rabbit → Snake → Hawk → Bacteria.
- 6 ..... organisms increase soil fertility.  
a. Producer      b. Carnivore      c. Herbivore      d. Decomposer
- 7 All the following are considered as producer organisms, except .....  
a. carrot      b. rabbit      c. grass      d. cactus
- 8 Which of the following is a correct example of a food chain?  
a. Mouse → Snake → Grass.      b. Rabbit → Carrots → Bacteria.  
c. Grass → Deer → Bacteria.      d. Hawk → Fish → Algae.
- 9 Which of the following organisms could end the food chain?  
a. Mouse and snake      b. Rabbit and carrots  
c. Grass and cactus      d. Bacteria and fungi
- 10 A food chain begins with .....  
a. decomposers      b. producers      c. consumers      d. humans
- 11 A plant obtains energy directly from the .....  
a. moon      b. animals      c. Sun      d. humans
- 12 ..... organisms are responsible for returning the organic elements to the soil.  
a. Producer      b. Consumer      c. Decomposers      d. Predators

- 13 Energy passes between living organisms through the .....  
 a. **ecosystem**      b. water      c. air      d. soil
- 14 Which of the following are decomposers?  
 a. Locusts      b. Hawks      c. Grass      d. **Bacteria**
- 15 All the following are considered consumer organisms, except  
 .....  
 a. owls      b. rabbits      c. **algae**      d. grasshoppers
- 16 Energy passes from the Sun to the consumer organisms through  
 ..... organisms.  
 a. predator      b. **producer**      c. decomposer      d. prey

Q2

Put (✓) or (X):

- 1 The lion is a consumer organism. سلسلة كس ..... (✓)
- 2 Humans are the main source of energy on Earth. (X)
- 3 In the ecosystem, energy is transferred from one organism to another. (✓)
- 4 Light seeds are spread by wind. (✓)
- 5 A food chain begins with consumers. (X)
- 6 An ecosystem is several interconnected food chains. (X)
- 7 A snake is an example of a predator and prey in some food chains. (✓)

Q3

Mention the scientific term:

- 1 It is the path of energy flow from one organism to another. (**Food chain**)
- 2 It is a process in which the plant obtains energy. (**Photosynthesis process**)
- 3 It is a system consisting of living organisms and nonliving things.  
 (**Ecosystem**)
- 4 It is the main source of energy on Earth. (**The Sun**)
- 5 They are organisms that produce their own food. (**Producers**)
- 6 It is a group of different food chains that interact together. (**Food web**)

**Q4 Complete the following sentences:**

- 1 The main source of energy on the surface of the Earth is the Sun.
- 2 An ecosystem consists of living organisms and nonliving things.
- 3 Decomposers feed on the remains of dead organisms.
- 4 Humans are consumer organisms.
- 5 Energy is transferred from producers to consumers through the food chain.
- 6 An animal that feeds on another animal is called consumer.
- 7 Fish and birds are consumer organisms.
- 8 A food chain ends with decomposer organisms.
- 9 When a fox feeds on a rabbit, the rabbit is called a predator.
- 10 The interconnection of a group of food chains is known as a food web.
- 11 The food chain begins with a producer organism.
- 12 Light seeds are spread by wind.
- 13 The organisms responsible for returning organic elements to the soil are the decomposers.

**Q5 Give reasons for:**

- 1 Trees are considered as producers.  
**Because they can make their own food by the photosynthesis process.**
- 2 The food web is a system of energy flow.  
**Because a food web consists of several interconnected food chains that show the flow of energy between living organisms.**

**Q6 What happens if:**

- 1 Decomposers disappear?  
**Dead organisms will not decompose and their nutrients will not return back to the soil.**
- 2 Sunlight does not reach the Earth?  
**Plants can't make their own food by the photosynthesis process and can't produce oxygen gas, which all living organisms need to breathe.**

**Q7. Answer the following:****Q1. Mention:**

- 1 One example of a decomposer organism.  
**Bacteria – fungi – worms – millipeds**
- 2 One example of a consumer organism.  
**Rabbit – deer – lion – snake**
- 3 One example of a producer organism.  
**Plants – grass – trees – carrot**
- 4 The way of sticky and rough seeds dispersal.  
**By animal fur or human clothes**
- 5 The role of decomposers in the food chain.  
**They decompose the dead organisms and return their nutrients back to the soil.**
- 6 The importance of the earthworms to the soil.  
**They increase the soil fertility because they recycle nutrients to the soil.**

**Q2. Explain the following statements:**

- a. A plant needs sunlight.  
**To make its own food by the photosynthesis process.**
- b. A food web is an energy flow system.  
**Because a food web consists of several interconnected food chains that show the flow of energy between living organisms**

**Q3. Create food chains from the following organisms.**

- a. Rabbits – Grass – Hawks – Snakes  
**Grass → Rabbits → Snakes → Hawks**
- b. Insects – Snakes – Grass – Frogs – Hawks  
**Grass → Insects → Frogs → Snakes → Hawks**
- c. Rabbits – Carrots – Snakes – Bacteria – Hawks  
**Carrots → Rabbits → Snakes → Hawks → Bacteria**
- d. Mice – Grass – Hawks – Snakes  
**Grass → Mice → Snakes → Hawks**

# Concept

# 1.3

Q1

Choose the correct answer:

- The drying up of lakes leads to a/an ..... in the ecosystem.  
a. stability      b. **imbalance**      c. strength      d. balance
- When the grass in the ecosystem decreases, the number of rabbits .....  
a. increases      b. is not affected      c. **decreases**      d. remains the same
- Which of the following organisms begins the marine ecosystem?  
a. **Algae**      b. Mollusks      c. Sharks      d. Grass
- A cactus is considered a ..... organism in the desert food web.  
a. **producer**      b. consumer      c. decomposer      d. prey
- The ..... is created to preserve marine organisms in their ecosystem.  
a. desert      b. aquarium      c. **protected marine environment**
- All the following cause disruption to food webs in the desert environment, except .....  
a. drought      b. **light rain**      c. pollution      d. floods
- Algae are found in the ..... of the marine food chain.  
a. **beginning**      b. middle      c. end      d. last
- Which of the following organisms begins the food chain in the desert environment?  
a. Rabbit      b. Fox      c. **Grass**      d. Algae
- All the following organisms are affected by plastic materials in water, except .....  
a. seabirds      b. **algae**      c. whales      d. sea turtles
- ..... are considered homes to many fish.  
a. Microorganisms      b. Marine algae      c. Sea turtles      d. **Coral reefs**
- ..... is considered one of the human activities that negatively affect the marine environment.  
a. Loss of algae      b. Climate change  
c. **Throwing plastic materials into the seas**  
d. Recycling plastic

- 12 A food chain in the ocean begins with .....  
 a. small fish.      b. **microorganisms**      c. sea turtles      d. starfish
- 13 Overfishing leads to a/an ..... in the number of marine organisms.  
 a. increase      b. growth      c. **decrease**      d. a lot of
- 14 All the following happen when the temperature of water rises in the oceans, except .....  
 a. **increased numbers of microorganisms**  
 b. corals get rid of algae  
 c. small fish move to other areas      d. coral bleaching
- 15 Microorganisms need ..... water to survive.  
 a. moderate      b. **cold**      c. hot      d. warm
- 16 ..... cause the death of marine organisms when feeding on them.  
 a. Floods      b. Plants  
 c. Algae      d. **Plastic materials**
- 17 The phenomenon of coral bleaching happens as a result of ..... water temperature.  
 a. **rising**      b. moderating      c. decreasing      d. constant
- 18 ..... is considered one of the causes of disruption in the marine environmental web.  
 a. Habitat restoration      b. Nursery  
 c. **Overfishing**      d. Heavy rain

Q2

Put (✓) or (X):

- 1 An ecosystem is affected when decomposers disappear. (✓)
- 2 A food chain in the desert environment begins with algae. (X)
- 3 The octopus is an example of a producer organism in the marine ecosystem. (X)
- 4 Heavy rain leads to a disruption in the desert ecosystem. (✓)
- 5 Coral reefs are habitats to many fish. (✓)
- 6 Loss of habitat is one of the most important causes of extinction. (✓)
- 7 Recycling plastics contributes to preserving the ecosystem. (✓)
- 8 Plastic materials have a positive effect on marine organisms. (X)

## Final Revision

- 9 The number of living organisms decreases if climatic conditions are suitable. (X)
- 10 Human activities that occur on land effect the marine ecosystem. (✓)

### Q3 Mention the scientific term:

- 1 It is the disappearance or death a species of marine organisms. (Extinction)
- 2 It is an area in the ocean where small pieces of corals are cared for. (Nursery)
- 3 They are small pieces of plastic material that are a grain of rice size. (Microplastics)

### Q4 Complete the following sentences:

- 1 The absence of producers leads to the death of consumers.
- 2 Energy passes from grass to locusts in the desert environment.
- 3 When producer organisms disappear from an ecosystem, primary consumer organisms die.
- 4 The Island of Palau needs to establish a conservation program to protect its waters from pollution.
- 5 Loss of habitat is one of the most important reasons for extinction.
- 6 Seabirds depend on small fish for their food.
- 7 Marine microorganisms move to a new habitat when there is a change in the temperature of water.
- 8 Algae are considered producer organisms in the marine environment.
- 9 Sunlight causes plastic materials to break down into small particles.
- 10 Coral reefs turn white due to the increase in water temperature.

### Q5 Give reasons for:

- 1 Sea turtles eat a lot of plastic materials.  
**Because they can't differentiate between a jellyfish and a piece of plastic.**
- 2 The phenomenon of coral bleaching occurs.  
**When water temperature rises, coral reefs get rid of algae and their color turns completely white.**

**Q6 What happens if:**

- 1 Drought occurs in an ecosystem?

The ecosystem may be destroyed because plants will die and also primary consumers will die.

- 2 Grass disappears from the desert ecosystem?

Primary consumers will move to another place to search for food or they will die.

- 3 The water temperature increases for microorganisms?

Microorganisms will move to cooler water along with small fish.

- 4 The amount of plastic materials in the marine environment increases?

Plastic will harm organisms that live in water, such as whales, sea turtles, and corals.

- 5 Living organisms cannot adapt to climate changes?

Living organisms will move to another habitat or they will die (their population will decrease.)

**Q7 Answer the following questions****Q1. Mention:**

- 1 Some methods that are used to reduce pollution of the marine environment with plastic materials.

1. Decreasing the use of plastic products

2. Recycling plastic products

- 2 One of the causes of habitat loss.

- Building more buildings and roads

- Throwing waste materials in water

- Overfishing

- 3 The importance of the nursery.

Scientists take care of corals until they grow and can be moved back to the reefs.

**Q2. Create a food chain from the following organisms:**

- Sea urchins – Sharks – Algae – Parrotfish

Algae → Sea urchins → Parrotfish → Sharks

# Concept

# 2.1

Q1

Choose the correct answer:

- Which of the following substances consists of particles that are closely connected to each other?  
a. Helium gas      b. **Wood**      c. Water vapor      d. Cooking oil
- The matter consists of a group of .....  
a. organs      b. devices      c. gases      d. **particles**
- The atmospheric air is considered a ..... matter.  
a. solid      b. frozen      c. liquid      d. **gaseous**
- Which of the following is not considered a matter?  
a. Wood      b. Air      c. **Light**      d. Water
- Pens and rulers are examples of ..... matter.  
a. **solid**      b. liquid  
c. gaseous      d. all the previous
- The particles of matter are very close to each other in the state of .....  
a. oxygen      b. water      c. oil      d. **iron**
- Water is found in nature in ..... states.  
a. **three**      b. four      c. five      d. six
- Everything that has mass and occupies space is called .....  
a. volume      b. state      c. **matter**      d. mass
- The distances between the particles of a gaseous matter are ..... the distances between the particles of a liquid matter.  
a. double      b. **greater than**      c. equal to      d. smaller than
- The ..... is considered a similar copy to the real thing to illustrate its shape or the way it works.  
a. energy      b. particle      c. **model**      d. matter
- A ..... matter has a fixed volume and a variable shape.  
a. solid      b. **liquid**      c. frozen      d. gaseous
- Which of the following consists of particles that are interconnected and very close together?  
a. Edible oil      b. Water vapor      c. Helium      d. **Wood**

- 13 The movement of water particles is slower than the movement of .....  
 a. oil                      b. cars                      c. **hydrogen**                      d. juice
- 14 The steam rising from food is an example of a ..... state.  
 a. solid                      b. liquid                      c. **gaseous**                      d. frozen
- 15 Which of the following substances can be poured?  
 a. Salt                      b. Water vapor                      c. **Milk**                      d. Air

**Q2 Put (✓) or (X):**

- 1 Sound is a form of energy. (✓)
- 2 Ice turns into a liquid by cooling. (X)
- 3 A gaseous matter does not occupy space. (X)
- 4 Milk has a fixed shape whatever the shape of the container is. (X)
- 5 The same substance can exist in nature in more than one state. (✓)
- 6 When we press on a balloon, its volume increases. (X)
- 7 Models help us understand how things work. (✓)
- 8 The particles of solid matter spread very quickly. (X)
- 9 Germs can be seen with the naked eye. (X)
- 10 Solids, liquids, and gases have a specific shape in common. (X)
- 11 A gaseous matter has a fixed volume and an unstable shape. (X)

**Q3 Mention the type of each of the following matters:**

Oil – Book – Apple – Water vapor – Table – Ruler – Helium – Tree – Vinegar

**Solid: Book – Apple – Table – Ruler – Tree**

**Liquid: Oil – Vinegar**

**Gas: Water vapor – Helium**

**Q4 Write what the following statements mean:**

- 1 It is the amount of space occupied by a body. (Volume)
- 2 It is a matter whose particles are not interconnected and move completely freely. (Gas)
- 3 They are the small units that make up matter. (Particles)
- 4 It is the state of water after freezing. (Solid state)

- 5 It is a copy of something to show what it looks like or how it works. (Model)
- 6 It is a state of matter whose shape is variable and volume is constant. (Liquid)
- 7 They are the building units of matter. (Particles)

Q5

**Complete the following sentences:**

- 1 Matter can exist in **3** states.
- 2 Matter can be poured in the **liquid** state.
- 3 Sound is considered a form of **energy**.
- 4 Everything that has mass and occupies space is called **matter**.
- 5 Water can exist in a solid state in the form of **ice**.
- 6 The particles of matter are very close together in **solid** matter.
- 7 The particles of a **gaseous** matter spread very quickly.
- 8 A **liquid** matter can be poured, but a solid matter cannot be poured.
- 9 A pen is an example of a **solid** matter.
- 10 The **liquid** state of water changes when it is heated or cooled.
- 11 Matter consists of small units called **particles**.
- 12 Gases have **no definite** shape and volume.
- 13 A **solid** matter has a fixed shape and volume.
- 14 The shape of a **gaseous** matter and its volume are variable.

Q6

**Mention the importance of:**

- 1 Earth model.  
سلسلة كتب الاستاذ  
**To know the shape of Earth**  
**To know how much of Earth is covered with water**  
**To know where different countries are located**
- 2 Solar system model.  
**- It helps us see all planets at once.**  
**- It helps us compare between planets, knowing which one is the biggest, and which one is the closest to Earth.**

**Q7 Compare between:**

- The solid, liquid, and gaseous states in terms of:

\* The arrangement of particles

\* Strength of the bond between them

P.O.C	Solid	Liquid	Gaseous
Arrangement of Particles	Regular pattern (organized) Very close to each other	Not well- organized	Random arrangement (Not organized at all)
Strength of Bond	Strong	Moderate	Weak

**Q8 Give reasons for:**

- 1 Vinegar takes the shape of the container that it is placed in.

**Because it is liquid and its particles slide over each other.**

- 2 Oxygen has an indefinite shape and volume.

**Because oxygen is a gas.**

- 3 The cup has a definite shape and volume.

**Because a cup is solid matter**

**Q9 What happens if:**

- 1 You put a bottle of water in the freezer?

**It freezes (changes from a liquid state to a solid state).**

- 2 You expose a piece of ice to the Sun for a long time?

**It changes from a solid state to a liquid state.**

- 3 Water is exposed to a high temperature?

**Water changes from a liquid state to a gaseous state (water vapor).**

- 4 You press on an inflated balloon?

**Its volume decreases, and the particles of air inside it get closer.**

- 5 Water is exposed to a low temperature?

**It freezes (water changes from a liquid state to a solid state (ice)).**

# Concept 2.2

Q1

Choose the correct answer:

- We use the ..... unit to measure the mass of the body.  
a. liter  
b. **kilogram**  
c. meter  
d. cubic centimeter
- All the following are chemical properties of matter, except .....  
a. burning  
b. combustion  
c. **color**  
d. rust
- We use a ..... to measure temperature.  
a. ruler  
b. **thermometer**  
c. measuring cup  
d. common balance
- The amount of matter that the body contains is known as .....  
a. volume  
b. temperature  
c. **mass**  
d. length
- A tape measure is used to measure the .....  
a. temperature  
b. weight  
c. volume  
d. **length**
- The ..... is known as the space occupied by a body.  
a. mass  
b. **volume**  
c. length  
d. temperature
- We use a ..... to measure the mass of a book.  
a. measuring cup  
b. measuring tape  
c. **common balance**  
d. thermometer
- The ..... is considered one of the chemical properties of matter.  
a. color of apples  
b. smell of vinegar  
c. **burning of a paper**  
d. color of gold
- 5 liters = .....  $\text{cm}^3$   
a. 0.5  
b. 50  
c. 500  
d. **5,000**
- ..... is used in making car tires.  
a. Copper  
b. Helium  
c. **Rubber**  
d. Glass
- ..... floats above the surface of water.  
a. Iron  
b. Aluminum  
c. **Wood**  
d. Copper
- Which of the following properties of matter cannot be measured?  
a. Length  
b. Mass  
c. **Taste**  
d. Volume

- 13 ..... is considered one of the matters that are attracted to magnets.
- a. Plastic                      b. Wood                      c. **Iron**                      d. Cork
- 14 ..... is used to make medical glasses.
- a. Helium                      b. **Glass**                      c. Rubber                      d. Iron
- 15 A ..... is used to measure the volume of a matter.
- a. common balance                      b. measuring tape
- c. **measuring cup**                      d. thermometer
- 16 All the following describe the physical properties of matter, except the .....
- a. texture                      b. taste                      c. **iron rust**                      d. color
- 17 All the following are units of mass measurement, except .....
- a. tons                      b. grams                      c. **liters**                      d. kilograms

Q2

Put (✓) or (X):

- 1 The shapes of houses vary from one environment to another. (✓)
- 2 A ruler is used to measure the mass of objects. (X)
- 3 The texture of the fabric is one of the chemical properties of the matter. (X)
- 4 Iron rust is considered a physical change in the matter. (X)
- 5 Temperature expresses the speed of particles movement in the matter. (✓)
- 6 It is possible to distinguish between iron and gold using the sense of smell. (X)
- 7 Balloons are filled with helium gas. (✓)
- 8 Wood is a good conductor of electricity. (X)
- 9 A measuring cup is used to measure the temperature. (X)
- 10 The mass of matter changes from one state to another. (X)
- 11 Shape and volume are physical properties of matter. (✓)
- 12 The roof of a desert house is similar to the roof of a house in a tropical forest. (X)

**Q3 Write what the following statements mean:**

- 1 It is a non-toxic material used to fill air balloons. (Helium gas)
- 2 It is the ability of a material to transfer electricity and heat through it. (Conduction)
- 3 They are the properties that can be observed using the five senses. (Physical properties)

**Q4 Complete the following sentences:**

- 1 The **volume** of matter is measured by a measuring cup.
- 2 The length of a classroom can be measured by **meters** unit.
- 3 3 kilograms = **3,000** grams.
- 4 Iron rust is an example of the **chemical** properties of a matter.
- 5 Color, taste, and smell are the **physical** properties of a matter.
- 6 **A measuring cup** is used to measure the volume of a matter.
- 7 **Helium** gas is used to fill balloons.
- 8 **Copper** is used to make electrical wires because it is a good conductor of electricity.
- 9 **Copper** is used to make cooking utensils.
- 10 The roof of the house is sloping in places with **cold** weather.
- 11 Thermal conduction is one of the **physical** properties of matter.
- 12 The roof of the house is flat in places with **hot** weather.

**Q5 Mention one of the uses of:**

- 1 Copper: **Copper is used in making electric wires and cooking pans.**
- 2 Helium: **Helium is used to fill up balloons and blimps.**
- 3 Glass: **Glass is used in making eyeglasses and electric lamps.**

**Q6 Give reasons for:**

- 1 Cookware handles are made of plastic not metal.  
**Because plastic is a bad conductor of heat, and metal is a good conductor of heat.**

- 2 Glass is used to make electric lamps.  
**Because it is transparent and smooth.**
- 3 Wood is not used to make electrical wires.  
**Because wood is a bad conductor of electricity.**

Q7

**What happens if:**

- 1 The particles of the matter are interconnected and close in relation to their density?  
**Its density increases.**
- 2 The density of the substance is greater than the density of the liquid?  
**It sinks in liquid.**
- 3 The density of the matter is less than the density of the liquid?  
**It floats on liquid.**

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# Concept 2.3

Q1

Choose the correct answer:

- The mass of ice after melting is ..... its mass before melting.  
a. double      b. greater than      c. equal to      d. less than
- When water is placed in the freezer, it turns into ice as a result of .....  
a. melting      b. freezing      c. filtration      d. evaporation
- The process of freezing is the reverse process of .....  
a. boiling      b. melting      c. condensation      d. evaporation
- Examples of physical processes include .....  
a. iron rusting      b. wood burning  
c. paper burning      d. making a fruit salad
- Liquid chocolate can be returned into its solid state by .....  
a. heating      b. cooling      c. evaporation      d. condensation
- The speed of particles movement increases in the process of .....  
a. freezing      b. melting      c. condensation      d. cooling
- The components of a mixture of sand and water are separated by .....  
a. filtration      b. evaporation  
c. cooling      d. filtration and cooling
- Condensation is the change of matter from the ..... state to the liquid state. سلسلة كتب الأستاذ  
a. solid      b. gaseous      c. physical      d. chemical
- A chemical change occurs when ..... a paper.  
a. bending      b. cutting      c. burning      d. grinding
- The melting of wax is considered a/an ..... change.  
a. environmental      b. chemical      c. organic      d. physical
- ..... is considered a physical change.  
a. Bread making      b. Rock crushing      c. Iron rust      d. Wood burning

- 12 The mass of a mixture before mixing is ..... its mass after mixing.  
 a. greater than    b. equal to    c. smaller than    d. double
- 13 What is the correct order of water desalination steps?  
 a. Evaporation – Filtration – Condensation  
 b. Condensation – Filtration – Evaporation  
 c. Filtration – Evaporation – Condensation  
 d. Evaporation – Condensation – Filtration
- 14 All the following are physical changes, except .....  
 a. cutting vegetables    b. burning a paper  
 c. cutting cloth    d. melting ice
- 15 The formation of copper into wires is a/an ..... change.  
 a. thermal    b. chemical  
 c. environmental    d. physical
- 16 All the following are chemical changes of matter, except .....  
 a. burning wood    b. cutting fruits    c. food digestion    d. iron rust

Q2

Put (✓) or (X):

- 1 Heat is a form of matter. (X)
- 2 Melting is the transformation of ice into water. (✓)
- 3 A mixture consists of only one substance. (X)
- 4 Changing the temperature affects the shape and mass of matter. (X)
- 5 When a liquid matter is heated, it turns into a solid state. (X)
- 6 Separating mixtures by evaporation requires raising the temperature. (✓)
- 7 Grinding sugar is considered a physical change. (✓)
- 8 The change in the state of water from a solid to a liquid is a chemical change. (X)
- 9 A physical change is a change in the form of matter only. (✓)
- 10 The formation of rust on an iron nail is an evidence of chemical change. (✓)
- 11 Salty sea water becomes drinkable after the filtration stage. (X)
- 12 Melting of wax produces a new substance, so this is considered a chemical change. (X)

**Q3 Write what the following statements mean:**

- 1 It is the process of changing matter from a solid state to a liquid state by raising the temperature. (Melting)
- 2 It is the process of changing matter from a gaseous state to a liquid state. (Condensation)
- 3 It consists of two or more mixed substances that can be easily separated. (Mixture)
- 4 It is a red chemical crust resulting from the reaction of iron with oxygen. (Rust)
- 5 It is a change in the shape, size, and state of matter. (Physical change)
- 6 It is a change in the composition of matter and a new substance is produced. (Chemical change)

**Q4 Complete the following sentences:**

- 1 Water turns into steam as a result of **gaining** thermal energy.
- 2 **A compound** consists of two or more substances combined chemically.
- 3 The movement of matter particles increases when the temperature of the matter **increases**.
- 4 The change of matter from a gaseous state to a liquid state is called **condensation**.
- 5 A mixture of a solid dissolved in water is separated by **evaporation**.
- 6 The **mixture** consists of two or more substances that are not chemically combined.
- 7 A matter changes from a solid state to a liquid state when it **gains** thermal energy.
- 8 Heat is one of the forms of **energy**.
- 9 The transformation of ice into water is considered a **physical** change.
- 10 **Physical** changes do not change the composition of matter.
- 11 Salty sea water becomes drinkable after the **evaporation** stage.
- 12 The formation of gas bubbles when mixing an amount of vinegar with baking soda is an evidence of a **chemical** change in the matter.

- 13 Forming copper into wire is considered a **physical** change.
- 14 Digestion of food within the body's cells is a **chemical** change.
- 15 Melting a piece of butter is a **physical** change.

### Q5 Classify the change that occurs:

- |                 |                 |
|-----------------|-----------------|
| 1 Wax melting   | Physical change |
| 2 Cloth bending | Physical change |
| 3 Wood burning  | Chemical change |

### Q6 What is meant by:

- 1 Freezing

It is the change of matter from a liquid state to a solid state by cooling.

- 2 Melting

It is the change of matter from a solid state to a liquid state by heating.

- 3 Condensation

It is the change of matter from a gaseous state to a liquid state by cooling.

### Q7 Give reasons for:

- 1 Heat is not a matter.

Because it is a form of energy. it doesn't have mass and volume.

- 2 The Earth's atmosphere is a mixture.

Because it is formed of different gases: oxygen, nitrogen, and carbon dioxide.

- 3 Melting is a physical change.

Because the matter changes without any change in its properties.

- 4 Burning wood is a chemical change.

Because wood changes into ash (a new substance with different properties).

- 5 Dissolving sugar in water is a physical change.

Because there is no change in the structure of the sugar.

Q8

**What happens:**

1 To the mass of a matter when heated or cooled?

**The mass does not change.**

2 When we place a piece of ice in the Sun for a long period of time?

**The ice melts and changes to water, then water evaporates and changes into water vapor.**

3 When water is cooled to a temperature below zero degrees Celsius?

**It will freeze (change from liquid state to solid state)**

4 When we mix vinegar and baking soda?

**Gas bubbles are formed (chemical change).**

5 When iron is left in the air without coating.

**It rusts (a layer with reddish color).**

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