Explorer Science-4

Plants: Food Producers





Exercises

Section-I

Oral Questions:

- Stomata helps in the exchange of the air. **Ans.** 1.
 - Three parts of the plants in which food is stored are roots, leaves and stem.

В. Tick (✓) the correct answer:

- Ans. 1. (b) Leaf
 - (b) Stomata 2.
 - 3. (b) oxygen

(c) Leaf

5. (a) Cactus

Name the following: C.

Ans. 1. The flat broad surface of the leaf Leaf blade

The vein which runs along the centre of the leaf Midrib 3. The minute pores on a leaf Stomata

4. The green substance in the leaf Chlorophyll

5. The process through which a leaf prepares food **Photosynthesis**

6. A plant in which the food is prepared by the stem Cactus

Section-II

C.

Fill in the blanks: Α.

- **Ans.** 1. The **leaf blade** traps maximum sunlight.
 - 2. Air enters and leaves the leaf through the **stomata**.
 - 3. Plants produce **food** during photosynthesis.
 - 4. In cactus, photosynthesis takes place in the **stem**.
 - 5. Photosynthesis in plants is carried out during **day** time.
 - 6. During photosynthesis plants take in carbon dioxide and give out oxygen.

B. Write 'True' or 'False':

Ans. 1. True False 2. 3. True False True 5. True

Match the following:

Ans. 1. Chlorophyll — → (a) Green substance in leaf

(b) Flat broad surface of the leaf 2. Stomata_

3. Photosynthesis ★(c) Non-green plant

4. Mushroom -**→**(d) Tiny openings in leaf

5. Leaf blade -**→**(e) Carbon dioxide, water, light

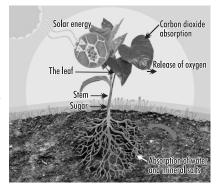
D. Answer the following questions:

To make food, a plant draws water from the soil through its roots and takes

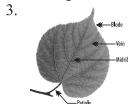
in carbon dioxide from the atmosphere through pores present on the leaves known as stomata. The green chlorophyll helps to absorb energy from sunlight.

The process by which plants make their food from water and carbon dioxide in the presence of sunlight is called photosynthesis.

During this process, they take in carbon dioxide and give out oxygen. The prepared food is called sugar.



2. The leaf has minute pores or openings called stomata. There are some stomata on the lower surface of the leaf. Air enters and leaves the leaf through these stomata. Water vapour too is released through the stomata.



- 4. The veins are small tubes that supply water brought by the stem and branches to all parts of the leaf. They also take the food prepared by the leaf to the stem, which supplies the food to the other parts of the plant.
- 5. Water, carbon dioxide, sunlight and chlorophyll are required by a plant for photosynthesis.
- 6. Green plants give human beings and animals food in the form of vegetables, fruits, nuts and grains. Animals cannot live without this food. Plants also release oxygen during photosynthesis and freshen up the air. Oxygen is used for breathing by animals and human beings. In turn, animals breathe out carbon dioxide which the plants need to prepare food.

Things To Do

Ans. Do yourself.

2 Adaptations in Plants and its Uses



Exercises

Section-I

A. Oral Questions:

Ans. 1. Mango and fir.

- 2. A cactus survive in the desert because its leaves are modified into spines. The spines prevent loss of water and also protect the plant from animals. The stems are green and help in photosynthesis.
- 3. Wolfia plant, lotus and hydrilla.
- 4. The plants of mountains have conical shape because the conical shape helps the snow to slide off easily from their branches.

B. Tick (\checkmark) the correct answer:

Ans. 1. (a) Peepal

2. (b) Hydrilla

3. (c) Pine

4. (c) marshy land

C. Cross (x) out the wrong words:

- **Ans.** 1. Plants that grow on land/in water are called terrestrial plants.
 - 2. Most trees that grow on hills/in plains are conical in shape.
 - 3. Plants like cactus grow in marshes/deserts.
 - 4. Plants that grow in marshy land have breathing/fixed roots.
 - 5. Plants that live near or in water are called terrestrial/aquatic plants.
 - 6. Duckweed and water hyacinth are fixed/floating plants.

Section-II

A. Fill in the blanks:

- **Ans.** 1. Pine trees have needle-like **leaves**.
 - 2. Peepal tree is a **terrestrial** type of tree.
 - 3. Spines in a cactus plant prevent loss of water.
 - 4. Trees which grow in marshy lands are known as **mangroves**.
 - 5. Water **lily** plant floats on water.
 - 6. Hydrilla and vallisneria plants are completely submerged in water.

B. Write 'True' or 'False':

Ans. 1. False 2.

2.

- True 3 True
- 4. False
- 5. True

C. Match the following:

Ans. 1. Mangroves

Tape grass-

- (a) Mountains (b) Terrestrial plant
- 3. Cactus (c) Aquatic plant
- 4. Peepal (d) Marshy land
- 5. Spruce (e) Desert

D. Answer the following questions:

Ans. 1. In deserts, most plants grow roots that spread out just below the surface of the ground so that the roots can absorb most of the water that falls on the ground. Some grow roots that go deep down into the soil in search of water.

Most desert plants have very few leaves with a waxy coating. In many other plants, the leaves are modified into spines. The spines prevent loss of water and also protect the plant from animals.

The stems are green and help in photosynthesis. The stems are also fleshy because they store water. The waxy coating on the stems and leaves prevents loss of water.

- 2. The conical shape helps the snow to slide off easily from their branches. They have needle like leaves with very few stomata to conserve water. Instead of flowers they bear cones which have seeds.
- In marshy lands, the soil is clayey and covered with water. The roots of the trees that grow here do not get air from the soil. So, they grow out of the soil and water to breathe. These roots are called breathing roots. The roots also hold the tree above water like stilts.
- Plants that grow on land are called terrestrial plants. Terrestrial plants are of many types and grow on different types of land such as plains, deserts, cold places/mountains, wet areas and marshy areas.
- The plants remain completely submerged in water are called underwater plants. They have narrow and thin leaves and flexible stems that offer little resistance to water currents. They breathe through their body surface and do not have stomata. Hydrilla and vallisneria (tape grass) are examples of such plants.
- 6. Plants are useful in many ways.
 - We get most of our food from plants like fruits, vegetables, cereals, pulses, oil, sugar, spices, tea, coffee etc.
 - Many plants like tulsi, neem, eucalyptus, poppy etc. have medicinal properties and are used to make important medicines.
 - Vegetable oils are used to make soaps and shampoos.
 - Plant fibres that we get from cotton, jute and flax are used to make clothes, sacks, carpets, ropes etc.
 - Paper is made from bamboo and wood of certain trees.
 - We get rubber from rubber trees to make tyres etc.
 - We use the wood of sheesham, teak and sal trees to make furniture and build houses.

Ans. Do yourself.

Animal Adaptations

Unit-2: The Animal World



Exercises

Section-I

Oral Questions: Α.

Ans. 1. Flippers help aquatic animals to move around in water.

- 2. Polar bears have fur on their bodies to keep them warm.
- 3. Camels have long legs to protect their body away from the heat of the sand. They can live without water for several days because there is shortage of water in their habitat, the desert.

В. Tick (✓) the correct answer:

Ans. 1. (b) Frog 2. (a) migration



3. (a) Monkey

4. (c) hibernation

C. Give one word for the following:

1. They eat flesh of other animals

2. They possess hair on their body

3. Their skin is smooth and moist

They are without backbone

5. Their body is elongated, cylindrical or flattened

Carnivores

Polar bears

Amphibians Invertebrates

Worms Write 'T' for terrestrial, 'A' for amphibian, 'Aq' for aquatic, 'Ar' for arboreal and 'Ae' for aerial below the pictures of animals given below:

Ans.

D.











Section-II

Fill in the blanks: Α.

1. The animals living on land are called **terrestrial** animals. Ans.

- The living place of an animal is called its **habitat**.
- 3. **Arboreal** animals spend most of their time on trees.
- 4. Rearing, catching and management of fish is called **pisciculture**.
- 5. **Amphibians** can live both on land and in water.
- 6. The periodic shedding of exoskeleton is called **moulting**.
- 7. The larval forms of frogs are called **tadpoles**.
- **Insects** respire with the help of tracheae.

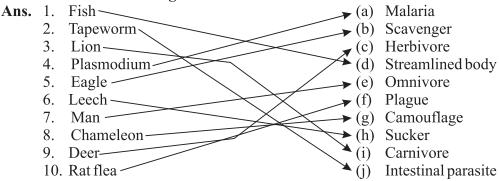
В. Write 'True' or 'False':

1. False 2. False Ans.

3. True 4. False

5 True.

Match the following: C.



Answer the following questions: D.

The animals with a backbone are termed as vertebrates. These include Ans. 1. fish, amphibians, reptiles, birds and mammals.

- 2. The animals without a backbone are termed as invertebrates. Many small animals like insects, worms and snails are included in this group.
- 3. Animals living in different surroundings adapt themselves to survive in

- their surroundings. This process of adjustment to their surroundings by the development of suitable characters to improve the chance of survival is called adaptation.
- 4. Some animals like frogs, lizards, crocodiles and snakes cannot bear the extreme cold. So, they undergo winter sleep called as hibernation.
- 5. The process of travelling long distances in search of food and warmth from one place to another and again returning back is called migration. Mainly, birds show migration.
- 6. Animals like zebra, tiger and leopard hide themselves because of their skin colour. Garden lizard (chameleon) can change its colour according to the surroundings. This phenomenon of change of the body colour according to the surroundings is called camouflage.

Ans. Do yourself.

Reproduction in Animals



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. Two ways by which animals reproduce are by giving birth to babies and by laying eggs.
 - 2. Incubation is the process of supplying warmth to the egg so that it develops into a baby.
 - 3. Animals that give birth to young ones and suckle them are called mammals. Horse and whale are example of mammals.
 - 4. The parts of an egg: Shell, yolk, albumen.

B. Tick (\checkmark) the correct answer:

Ans. 1. (b) tadpole

2. (c) caterpillar

3. (c) albumen

4. (b) Dog

Section-II

A. Fill in the blanks:

Ans. 1. Animals have a definite **shape.**

- 2. Mammals possess **mammary** glands.
- 3. Monkeys and squirrels are arboreal mammals.
- 4. The egg of **ostrich** is the biggest in the world.
- 5. The shell of the bird's egg protects the **embryo**.
- 6. Egg yolk provides **food** to the embryo.

B. Match the following:

Ans. 1. Reptile \ (a) Frog

(b) Human beings 2. Yolk ~

3. Mammal ► (c) White thick liquid in egg

(d) Yellow part in the egg 4. Albumen

5. Tadpole -**▲**(e) Snake

Answer the following questions: C.

Ans. 1. The process by which living things produce their offspring is known as reproduction.

2. There are some unique mammals which reproduce by producing eggs called egg-laying mammals. The mother mammal takes care of its eggs until they hatch.

There are two mammals which lay eggs instead of giving birth to live babies. They are duck-billed platypus and the spiny anteater called Echidna.

- 3. Parental care is parental investment provided by the mother and the father to insure development and survival of their offspring.
- The various developmental stages through which the eggs of animals pass to become adults constitute a life cycle.
- 5. The shedding of skin is termed moulting.

Things To Do

Ans. Do yourself.

Food—Our Basic Need

Unit-3: The Human World



Exercises

Section-I

Oral Questions: Α.

Ans. 1. Calcium and iron.

2. Water helps in the digestion of food, excretion of wastes and the regulation of body temperature.

Tick (✓) the correct answer: В.

Ans. 1. (a) cereals, beans

2. (b) refrigeration

3. (b) milk, curd

(b) carbohydrates

C. Write main function of each of the following:

Ans. 1. Carbohydrates: Carbohydrates are energy-giving nutrients.

2. Fats: Fats are nutrients that provide energy.

3. Proteins: Proteins are nutrients that our body requires for growth.

4. Vitamins: Vitamins are the nutrients that protect our body from diseases and keeps it healthy.

Roughage: Roughage makes throwing out wastes from the body easy.

Section-II

A. Fill in the blanks:

- **Ans.** 1. **Carbohydrates** are energy-giving nutrients.
 - 2. **Fats** provide more energy than carbohydrates.
 - 3. Water helps in the digestion of food.
 - 4. **Roughage** is the fibre in our food.
 - 5. Milk has almost all the nutrients.
 - 6. **Canning** and **drying** are preservatives.

B. Write 'True' or 'False':

Ans. 1. True 2. False 3. False 4. True 5. True.

C. Match the following:

Water

- Ans. 1. Fat

 2. Iron

 (a) Regulation of body temperature

 (b) Kills the germs of food

 3. Cooking

 (c) Slows the growth of germs
 - 4. Freezing (d) Provides energy

D. Answer the following questions:

- **Ans.** 1. The substances that are needed by our body for good health and growth are called nutrients.
 - 2. Carbohydrates are energy-giving nutrients. Sugar and starch are carbohydrates. They supply energy to the body.

(e) Helps in the formation of blood

- 3. Babies and young children need more proteins than adults as they are in the growing stage.
- 4. A balanced diet contains all the food nutrients along with proper amount of water and roughage.
- 5. Cooking makes the food soft, tasty and easily digestable. Cooking also kills the germs present in vegetables that can make us sick.
- 6. The food should be kept in the refrigerator as freezing slows the growth of germs. Some chemicals are added to the food to preserve them for a longer time. These are called preservatives. Food can also be preserved by canning and drying.

Things To Do

Ans. Do yourself.

Digestion of Food



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. Into the mouth, we chew the food with the help of our teeth. The food is broken down into smaller pieces by our teeth.
 - 2. Saliva changes starch of the food into sugar.

B. Tick (✓) the correct answer:

Ans. 1. (c) salivary glands

2. (a) small intestine (c) small intestine 3. (a) mouth 4.

C. Unscramble the names of the organs of the digestive system:

Ans. 1. TEINSINET: INTESTINE 2. HOTMSCA **STOMACH**

UTHMO 3. SNAU : ANUS **MOUTH**

5. VERLI : LIVER

Section-II

Α. Fill in the blanks:

Ans. **Saliva** is produced by the salivary glands.

The food pipe is also known as the **oesophagus**.

The bile is produced in the liver.

4. We should **chew** the food well before swallowing it.

В. Match the following:

Ans. 1. Mouth 2. Stomach -

The food is churned to break into simpler substances. (b) The undigested part of the food is

(c) Small intestine.

collected here. The solid body waste is thrown out

from it.

(d) 4. Large intestine The digestion of food begins here. 5. Anus-

The food gets mixed with digestive (e) juices here.

Write 'True' or 'False': C.

True 1. True 2. True 3. 4. False 5. True. Ans.

D. Answer the following questions:

Ans. The food that we eat is not directly used by the body to provide energy. It is broken down into a simpler form that the body can use. This process of breaking down of food into a simpler form is known as digestion.

- 2. The stomach muscles churn the food with more digestive juices. They break down proteins and other substances into simple, soluble substances.
- 3. Liver and pancreas.
- The undigested part of the food is passed to the large intestine. Here the water is absorbed from the undigested food. The solid part is thrown out of the body as waste through the opening called anus.
- 5. Here are some more good eating habits:
 - Wash your hands well with soap and water before you eat your food.
 - Eat at regular intervals.
 - Chew the food well before swallowing it.
 - Do not eat in a hurry.

Things To Do

Ans. Do yourself.



Exercises

Section-I

A. Oral Questions:

Ans. 1. Typhoid and pneumonia.

2. Enamel is the hardest substance in the human body.

B. Tick (\checkmark) the correct answer:

Ans. 1. (b) 32 teeth

2. (b) 8

3. (a) 20

C. State whether the following statements are true or false. Correct the wrong statements:

Ans. 1. False

2. True

3. False

4. False

Section-II

A. Fill in the blanks:

Ans. 1. A fungus named **yeast** is used in making of bread and wine.

- 2. The **permanent** teeth are 32 in number.
- 3. **Incisors** are the front teeth.
- 4. **Enamel** is the hardest-substance in our body.
- 5. Microbes can be seen only under the **microscope**.

B. Match the following:

Ans. 1. Molars.

- (a) The yellow sticky layer on the teeth
- 2. Canines (b) Cutting (chisel shaped) teeth
- 3. Plaque (c) Hold the teeth firmly
- 4. Enamel5. Incisors(d) Grinding teethTearing teeth
- 6. Gums (f) The hard white outer layer of the teeth

C. Write 'True' or 'False':

Ans. 1. False

2. True

3. False

4. True

5. False.

D. Answer the following questions:

Ans. 1. The teeth help us to bite, chew and grind the food. The teeth help us to speak clearly. Our tongue touches the teeth while pronouncing certain words. Moreover, teeth give a decent look to our face.

- 2. The four types of teeth are incisors, canines, premolars and molars.
- 3. Microbes are millions of very tiny living things found everywhere. They are so small that these cannot be seen with a naked eye. They can only be seen through a microscope.
- 4. The four types of microbes are bacteria, protozoa, fungi and viruses.
- 5. The microbes that are harmful to us and cause diseases are called germs. Typhoid, pneumonia, tuberculosis, malaria, dysentery, ringworm, influenza, measles, mumps and polio are some diseases caused by germs.

Things To Do

Ans. Do yourself.





Exercises

Section-I

A. Oral questions:

- **Ans.** 1. Natural fibres—jute and silk, Artificial fibres—nylon and polyester.
 - 2. Clothes protect us from the Sun's heat and from getting suntanned.
 - They protect us from cold and keep us warm in winter.
 - They protect us from rain. We use raincoats made of waterproof material and rubber shoes to keep our feet dry.
 - 3. Doctors, soldiers and policemen.

B. Tick (\checkmark) the correct answer:

Ans. 1. (c) Linen 2. (c) Hanbok

3. (a) Sari 4. (c) both (a) and (b)

C. Name the following:

Ans. 1. An artificial fibre : Rayon

2. An animal fibre : Wool3. A plant fibre : Cotton

4. Plant from which we get linen : Flax

5. Silk fibre is made by this insect6. Cloth worn by a policemanUniform

D. Unscramble the given words:

Ans. 1. EJTU : JUTE 2. KISL : SILK

3. OTCNOT: **COTTON**4. NAYRO: **RAYON**5. LOWO: **WOOL**6. ILENN: **LINEN**

Section-II

A. Fill in the blanks:

- **Ans.** 1. We wear clothes mainly to protect our **body**.
 - 2. Raincoats keep us dry during rains.
 - 3. Cotton, wool and silk are **natural** fibres.
 - 4. Synthetic fibres are also known as **man-made** fibres.
 - 5. **Soldiers** wear rough and tough clothes.
 - 6. The dirty clothes must be **washed** properly.

B. Write 'True' or 'False':

Ans. 1. False 2. False 3. False 4. True 5. False.

C. Answer the following questions:

- **Ans.** 1. In summer, we wear light coloured, cotton clothes which help the heat of our body to escape.
 - 2. In winter we wear woollen clothes, because these clothes keep us warm in winters.
 - 3. Clothes are made up of different fibres. Some are natural fibres whereas

- some are artificial fibres.
- 4. The dirty clothes must be washed properly with soap or detergent and water. Woollen clothes should not be washed with soap and water. They must be dry-cleaned.
- 5. The silk and woollen clothes that are not worn in summer should be stored properly, otherwise they can be damaged by insects like silverfish and moth. They should be kept in boxes along with mothballs or dried neem leaves to keep the insects away.
- 6. The Early man used animal skin and dried leaves to cover himself.

Ans. Do yourself.

9

Keeping Safe



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. Two safety rules that we have to follow in the kitchen to be safe:
 - Be careful while using sharp things like knives and tools.
 - Never wear nylon or synthetic clothes while working in the kitchen. Such types of clothes can catch fire easily.
 - 2. Accidents can be avoided if we are careful and alert. We also need to follow certain safety rules to avoid accidents.

B. Tick (\checkmark) the correct answer:

Ans. 1. (a) Keep safe

2. (c) doctor

3. (b) zebra crossing

4. (c) both (a) and (b)

C. Cross (x) out the wrong word:

- Ans. 1. We can slip on toys or shoes at home/school.
 - 2. We should not wear synthetic clothes in the kitchen.
 - 3. Always keep the bahroom dry/wet when not in use.
 - 4. Walk on the footpath/road to stay clear of vehicles.
 - 5. Always/Never fly kites standing on the terrace.

Section-II

A. Fill in the blanks:

- **Ans.** 1. Be careful while using **sharp** things.
 - 2. Do not touch switches and sockets with wet hands.
 - 3. Always follow the **rules** of the game.
 - 4. While riding a bicycle, keep on the left.

B. Write 'True' or 'False':

Ans. 1. False 2. True 3. False 4. False.

C. Answer the following questions:

Ans. 1. Slipping on the wet floor and the electric gadgets like geysers are the main



- dangers in the bathroom.
- 2. First-aid is the immediate care given to a person who is injured or gets suddenly sick. So to save the life of the injured person, immediate aid that is given before the doctor arrives is called first-aid.
- 3. In case of a nose bleeding, pinch the nose and hold it 7-8 minutes till it stops bleeding. Put some ice and wrap it up in a handkerchief. Then apply it to the nose. This will stop the bleeding quickly.
- 4. Never play games on the road. Always play in the playground. Never push or kick anyone while playing a game. Always follow the rules of the game. Do not play a rough game.

Ans. Do yourself.

10 Matter and its Forms



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. Molecules are made up of even tinier particles called atoms.
 - 2. A liquid (water) on heating changes to gas (water vapour). This process is called evaporation.
 - 3. On cooling a gas (water vapour) changes to liquid (water). This is called condensation.

B. Tick (\checkmark) the correct answer:

- **Ans.** 1. (c) both has weight and occupies space 2. (c) molecules
 - 3. (c) Both (a) and (b) 4. (b) Closely packed

C. Complete the second pair:

Ans. 1. Salt: Solute:: Water : Solvent

2. Solids: Fixed shape:: Gas : No fixed shape

3. Spoon: Solid:: Oil : Liquid
4. Water: Solvent:: Salt : Solute

Section-II

A. Fill in the blanks:

- **Ans.** 1. **Solids** have a definite shape.
 - 2. A **liquid** flows and can be poured in any container.
 - 3. Gases neither have a fixed **shape** nor a fixed **volume**.
 - 4. The **solvent** is the liquid in which a substance dissolves.

B. Write 'True' or 'False':

Ans. 1. True 2. False 3. False 4. False 5. True.

C. Answer the following questions:

Ans. 1. Everything we can hold, taste, or smell is made of matter. Matter makes up

everything we can see, including clothes, water, food, plants and animals. It even makes up things we cannot see, such as air or the smell of perfume. Therefore, we can say that all objects in the world are made of matter. Matter is anything that has mass and occupies space.

- 2. Matter is made up of tiny particles called molecules.
- 3. Matter is found in three states or forms. These are:
 - SolidLiquid
- Gas
- 4. Molecules of a solid are closely packed.
- 5. A liquid can be flowed and poured in any container. It takes the shape of container in which it is kept. But its volume remains the same. Hence liquids do not have a definite shape.
- 6. Some solids dissolve in liquids. These are called soluble substances.

Things To Do

Ans. Do yourself.

11 Properties of Materials



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. A material can be smooth or rough, soft or hard, break easily or do not break.
 - 2. The things which do not allow the light to pass through them are called opaque things.
- B. Tick (\checkmark) the correct answer:
- Ans. 1. (a) Cotton

- 2. (c) Glass
- 3. (a) iron nail
- D. Write 'O' for opaque things and 'T' for transparent things for the following things:

Ans.











Section-II

- A. Write 'True' or 'False':
- Ans. 1. True 2. False 3. False 4. False 5. False.
- B. Answer the following questions:
- **Ans.** 1. Some types of materials are soft. Soft materials can change its shape when pressed. For example, cotton, flower, wool, silk, sponges, etc. are soft.
 - 2. The things which allow the light to pass through them are called transparent things. e.g. glass, polythene sheet.
 - 3. Some things do not allow the heat to pass through them. Such things are



called non-conductors of heat. Some of the non-conductors of heat are wood, cork, glass etc.

4. Soft materials can change its shape when pressed. Hard materials cannot change their shape when pressed.

Things To Do

Ans. Do yourself.

12 Force, Work and Energy



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. Muscular force, Gravitational force and Frictional force.
 - 2. Sun and Wind.

B. Tick (\checkmark) the correct answer:

Ans. 1. (c) energy 2. (c) force 3. (a) muscular force 4. (c) heat

C. Write two examples for each of the following:

- Ans. 1. Types of force : Muscular force, Frictional force
 - 2. Types of simple machine : Lever, Pulley
 - 3. Types of energy : **Heat energy, Wind energy**
 - 4. Sources of energy : Sun, Wind

Section-II

A. Fill in the blanks:

- **Ans.** 1. An object can be moved by applying **force.**
 - 2. **Solar** energy is the ultimate source of energy on Earth.
 - 3. Energy is required to do all kinds of work.
 - 4. A pulley consists of a grooved **wheel** and a rope.
 - 5. Work is done when an object moves.

B. Match the following:

- Ans. 1. Force

 (a) Resist the motion of an object

 (b) Ability to do work

 3. Friction

 (c) Applying force
 - 4. Work (d) Push or pull
 - 5. Energy (e) Solar energy

C. Write 'True' or 'False':

Ans. 1. False 2. False 3. True 4. True 5. True.

D. Answer the following questions:

- Ans. 1. Force is defined as the push or pull on an object. For example, using force to move: bowl a cricket ball, using force to change direction: hit a cricket ball, using force to stop: catch a cricket ball.
 - 2. Energy is defined as the ability to do work.



Solar Energy

It is the energy that we get from the Sun. Solar energy can be converted into heat, light and electrical energy.

- 3. A moving body stops due to frictional force. When we roll a ball along the ground, it stops after some time. The ball stops because, as its surface rubs against the rough surface of the ground, the roughness causes the ball's movement to slow down and finally stop. This force is known as frictional force.
- 4. When work is difficult to do with our hands, we use tools called machines. Machines make our work easier. There are some simple machines that we use in our everyday life.

Pulley: A pulley is a simple machine that has a grooved wheel and a rope running between the grooves of the wheel.

Wedge: A wedge has at least one slanting surface ending in a sharp edge. This helps to cut things. A good example is an axe with which we cut wood.

5. Work is used to describe a lot of activities in everyday life. Work is said to be done when a force applied on an object causes it to move in the direction of the force applied.

For example; when we kick a football, we are applying force that causes it to move. This is considered as work because force is being applied to the football to make it move.

Things To Do

Ans. Do yourself.

13 The Changing Earth

Unit-5: Earth And Environment



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. The wastes and remains of the plants and animals form the soil's organic matter called the humus.
 - 2. The roots of the trees and grasses hold the soil particles together, thus preventing its washing or blowing away. The plants also act as barriers against, force of water and wind.

B. Tick (\checkmark) the correct answer:

Ans. 1. (c) bed-rock

2. (c) fertility

3. (b) soil conversation

4. (c) Core

C. Cross () out the wrong word:

Ans. 1. The Earth's centre is called the maxtle/core.

2. The first life forms originated in absence/presence of oxygen.

- 3. The molten material erupting from the volcano is lava/smoke.
- 4. The layer of soil below the sub soil is called comst/bed-rock.
- 5. Bacteria/Rats decay the plants and animals dead parts.

D. Write one word for the following:

Ans. 1. The top layer of the Earth's surface in which plants grow: Top soil

2. Removal of top soil by the action of wind and water : Soil erosion

3. The hole in the centre of the volcano : Crater

4. Underground water collects in this layer : **Bed-rock**

Section-II

A. Fill in the blanks:

Ans. 1. Earlier the Earth was a huge, hot ball of dust and gases.

- 2. The topmost layer of soil is called **top soil.**
- 3. Crater is a The hole in the centre of volcano.
- 4. The soil's organic matter is called **humus**.
- 5. **Dams** are big store-house of water.

B. Match the following:

Ans. 1. Soil erosion (a) Big store house of water

2. Soil conservation (b) Molten material

3. Humus (c) Loss of fertile soil

4. Lava (d) Protection of the top soil

C. Answer the following questions:

- Ans. 1. The Earth's surface became cooler. Some gases escaped while some were trapped inside. Thus, the outer surface of the Earth is hard but the inside of the Earth is still very hot. As the Earth cooled, the rocks were formed, moreover, clouds were also formed and as they cooled, rain occurred. This led to the formation of oceans and seas on the Earth. Now, the Earth had the conditions required to make life possible on it. These conditions were air, water and heat from the Sun.
 - 2. The outer surface of the Earth on which there are conditions suitable for life is called the crust. The portion under the crust which is made up of hot molten rocks is called the mantle. The hottest part of the Earth i.e. the Earth's centre is called the core.
 - 3. The factors responsible for the changes in the surface of the Earth are floods, Earthquakes, wind and water action.
 - 4. The top soil is loose and fertile and exposed to wind and water sources, it gets carried away. This reduces the soil fertility. This process of carrying away of the top soil by the natural forces is called soil erosion.
 - 5. Soil provides the base for the growth of variety of plants. Many animals like rats, moles, rabbits and snakes make their home in the soil. Other animals like ants, millipedes, centipedes, beetles, slugs, etc. also live in the soil. They make the soil loose for the germination and aeration. The wastes and remains of the plants and animals form the soil's organic

matter called the humus. Microorganisms like bacteria and fungi present in soil decay the plants and animals dead parts.

- 6. As the soil gets subjected to erosion, it is, therefore, required to be conserved. This protection of the top soil from erosion is called soil conservation. There are many ways by which the soil can be conserved. Some of them are:
 - By planting trees and grasses
 - By making bunds, dams and embankments
 - By making terraces or furrows

Things To Do

Ans. Do yourself.

14 The Weather



Exercises

Section-I

A. Oral Questions:

- **Ans.** 1. When the fog combines with smoke it forms smog.
 - 2. A strong wind blowing with thunder and lightening is called thunderstorm.
 - 3. The rotation of the Earth causes day and night.

B. Tick (\checkmark) the correct answer:

Ans. 1. (b) changes in the seasons

2. (a) condition of air

3. (b) in winter

Section-II

A. Fill in the blanks:

- **Ans.** 1. Cooling of water vapours in the air is called **condensation**.
 - 2. Water pollutants are unwanted substances added in water bodies.
 - 3. Water vapours turn into **frost** when frozen.
 - 4. The amount of water vapour in the air is called **humidity.**
 - 5. Stagnant water forms the houses of many germs.

B. Answer the following questions:

- **Ans.** 1. A current of moving air is called wind. A gentle wind is called breeze.
 - 2. Both the land and sea breeze occur due to the Sun.

Sea Breeze

During day, the land is heated up more than the water in the sea. The hot air above the land rises up and the cold air from the sea water rushes to fill the space. Thus, breeze blows from sea to land. It is called sea breeze.

Land Breeze

At night, the land looses its heat faster than water. So, the water is warmer than the land. The warm air above water rises up, cooler air from the land flows to fill its space. Thus, breeze blows from land to sea. It is called land



breeze.

- 3. The amount of water vapour in the air is called humidity.
- 4. Cooling of water vapour into water is called condensation. Its several forms are fog, dew, frost, hail and snow.
- 5. Addition of unwanted substances in water bodies which harmfully affect the life of the living organisms is called water pollution.

Things To Do

Ans. Do yourself.

15 Solar System



Exercises

Section-I

A. Oral Questions:

Ans. 1. Earth, Mercury, Venus and Mars.

2. Stars look small as they are exceedingly far from the Earth.

B. Tick (\checkmark) the correct answer:

Ans. 1. (a) Star

2. (c) Venus

3. (c) Mars

C. Circle the odd one:

Ans. 1. Venus, Earth, Sun

2. Mars, Moon, Jupiter

3. Stars, Sun, Earth

4. (Pluto) Mars, Saturn

Section-II

A. Fill in the blanks:

Ans. 1. **Jupiter** is the largest of all the planets.

- 2. **Mercury** is the closest planet to the Sun.
- 3. **Earth** is also called blue planet.
- 4. **Neptune** is the farthest planet from the Sun.
- 5. Satellites revolve around the **planet.**
- 6. **Space probes** send pictures of planets to the space centres.

B. Answer the following questions:

- **Ans.** 1. The Sun and the eight planets form the solar system.
 - 2. Small bodies between the orbits of Mars and Jupiter are termed as Asteroids.
 - 3. Moons or satellites are smaller heavenly bodies that revolve around the planet.
 - 4. Space probes are unmanned space-ships sent into space and travel very fast. Some pass near the planets, others orbit or land on them. They do not carry astronauts. They help us to know the weather conditions and the different kinds of minerals found on a particular planet. They send pictures to the space centres where the scientists analyse them.

Things To Do

Ans. Do yourself.

