

Life On The Earth

I. Answer the following questions :

- Ans.**
- The earth has all the things available which are essential for life.
 - We need oxygen to get energy from our food. Oxygen burns the food to produce energy.
 - Carbon dioxide, water and sunlight.
 - Water is very essential for many reactions that are taking place in our body. Plants need water to help them grow and produce food in their leaves.
 - The food is burnt up slowly in living bodies of human beings to give them heat and energy.
 - Air, water, mineral, sunlight and warmth.
 - Air and water.
 - Animals and human beings take in oxygen and breathe out carbon-dioxide. The carbon-dioxide is needed by the plants to synthesise their food. Animals also provide plants with manure. In this way, plants give something to human beings and animals, and they in turn give something to plants. This interdependence helps both of them to survive.

II. Fill in the blanks :

- Ans.**
- Animals and human beings take in **oxygen** and breathe out **carbon dioxide**.
 - Plants** are able to make their own food.
 - Plants and **animals** depend on each other.
 - All living beings need **oxygen** to get energy from their food.
 - Roots absorb water and minerals from the **soil**.
 - Green leaves make food for the **plant**.

III. Write whether the following statements are 'true' or 'false' :

- Ans.**
- | | |
|--|--------------|
| 1. The green pigment of leaves is called chlorophyll. | True |
| 2. Atmosphere circulates the heat over the earth. | True |
| 3. Water is not required for the germination of seeds. | False |
| 4. Carbon-dioxide is given out during breathing. | True |
| 5. Sunlight is harmful for plants. | False |
| 6. Plants and animals depend on each other. | True |

IV. Tick (✓) the correct option :

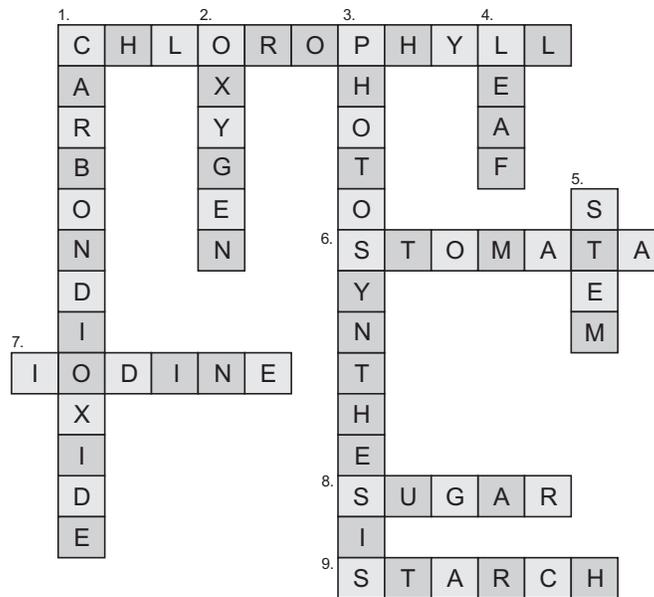
- Ans.**
- Human body contains water :

(a) 80%	<input type="checkbox"/>	(b) 75%	<input checked="" type="checkbox"/>
(c) 60%	<input type="checkbox"/>	(d) 90%	<input type="checkbox"/>

2. People who need oxygen cylinders are :
 (a) mountaineers (b) divers
 (c) patients (d) all of them
3. Atmosphere is a thicker layer of :
 (a) water (b) sand
 (c) soil (d) air
4. If we destroy plants we harm :
 (a) ourselves (b) other animals
 (c) both of them (d) none of them

V. Solve this crosspath with the help of clues given :

Ans.



I. Answer the following questions :

- Ans. 1. The process of making food by the plant using water, carbondioxide and sunlight is called photosynthesis.
 2. Water, carbon dioxide and sunlight.
 3. Air.
 4. A plant does not use all the food that it makes. The food that does not get used up, is stored in roots, stem, leaves and seeds of plants in the form of starch.

5. No, because green chlorophyll is not present in a yellow leaf.
6. We can test for the presence of starch in a leaf with a solution of iodine. Iodine is brown in colour. When it is added to starch, the starch turns blue-black in colour. Remove the green colour of the leaf. Now place the leaf in a petri-dish and put a few drops of iodine on it. The leaf turns blue-black. This shows that starch is present in the leaf.
7. The leaves use the energy of the sun to change water and carbon-dioxide into a kind of sugar.
8. Roots absorb water from the soil. The water absorbed by the roots then reaches the leaves with the help of the tubes.

II. Fill in the blanks :

1. **Chlorophyll** gives green colour to the plants.
2. **Sunlight** provides energy to the plant for making food.
3. **Roots** carry water to all parts of the leaves.
4. **Leaves** are the 'Food factory of the Plant.'
5. Iodine is **brown** in colour.

III. Write whether the following statements are 'true' or 'false' :

1. Leaves have a yellow-coloured pigment called chlorophyll. **False**
2. A total parasitic plant also makes some food. **False**
3. A plant has a network of fine tubes which begin in the roots and connects with all other parts of the plant. **True**
4. Carbon-dioxide gas enters a plant through the tubes present in their roots. **False**
5. Plants store food only in their roots. **False**
6. A plant uses sunlight that falls on its flowers. **False**
7. Plants use the energy from the sun to make their food. **False**
8. The food that does not get used up, is thrown out by the plant. **False**

IV. Match the following columns :

Ans.	Column 'A'	Column 'B'
	1. Water	(d) Through veins
	2. Starch	(a) Stored food in plants
	3. Chlorophyll	(b) Green substance that traps sunlight
	4. Leaf	(e) The food factory of the plant.
	5. Stomata	(c) Tiny holes on the underside of a leaf

V. Tick (✓) the correct option :

- Ans. 1. Which of these part of the plant make food?
- | | |
|------------|---|
| (a) roots | <input type="checkbox"/> (b) flowers |
| (c) leaves | <input checked="" type="checkbox"/> (d) seeds |

2. Leaves can make food for the plant because :
- (a) they have chlorophyll
- (b) they have stomata that allow air to enter
- (c) both (a) and (b)
- (d) none of these
3. Plants make their food with the help of :
- (a) sunlight, water, oxygen
- (b) chlorophyll, oxygen
- (c) sunlight, water, chlorophyll and carbon dioxide
- (d) soil
4. When plants use sunlight, water and carbon-dioxide, they produce :
- (a) oxygen gas
- (b) sugar and oxygen gas
- (c) sugar and nitrogen gas
- (d) sugar, water and carbon-dioxide gas
5. Carrot store food in their :
- (a) stems (b) leaves
- (c) roots (d) flowers

VI. Fill in the gaps in the following passage. Find the words in the puzzle :

Ans. Plants do not **eat** food like animals. They make their own **food**. The food is made in every leaf of the plant. Leaves use carbon-dioxide, **water** and **light** from the sun to make food. The **leaves** absorb water from the **roots** and **carry** it to every leaf. The **carbon dioxide** enters the leaf through tiny pores called **stomata**. Sunlight provides the plant **energy** required to make food. The excess amount of food is stored in different parts. For example, in sugarcane, it is stored in the **stem**.

Unit – 3 Animal Life

3

Reproduction in Animals

I. Answer the following questions :

- Ans.**
1. For life to go on, each living being should leave behind one of its own kind. The process by which new living beings resembling their parents are produced, is called reproduction.
 2. Birds lay eggs to reproduce.

3. When the young ones are fully developed, they break open the shell of the egg and come out. This process is known as hatching.
4. Eggs → larva → pupa → adult butterfly.
5. Because all do not get sufficient heat and some are eaten by other animals.
6. Eggs → tadpole → adult frog.
7. They give birth to their babies directly. The babies feed on their mother's milk. When babies are born, they are very weak and helpless. The mother cares for them and protects them till they can look after themselves.

II. Fill in the blanks :

- Ans.**
1. The animals with a pouch on their body carry their young ones are called **marsupials**.
 2. The process by which one living thing makes more of its own kind is called **reproduction**.
 3. The egg **hatches** to give out the baby bird.
 4. A **baby** comes out of an egg in some days.
 5. Mammals have **hair** on their bodies.

III. Write whether the following statements are 'true' or 'false' :

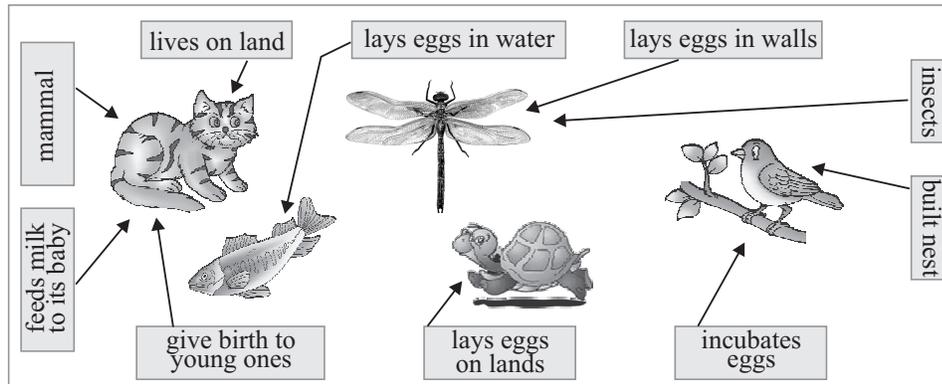
- Ans.**
- | | |
|--|--------------|
| 1. All insects lay eggs. | True |
| 2. All kinds of fish and frogs lay eggs in water. | False |
| 3. Mammals give birth to their young ones directly. | True |
| 4. An egg of an animal always hatches into a fully developed animal. | False |
| 5. Animals that have hair on their bodies do not lay eggs. | True |
| 6. Eggs of birds must be kept warm to develop into young ones. | True |
| 7. A baby cockroach is called a nymph. | True |
| 8. The young of a frog is called a tadpole. | True |

IV. Define the following terms :

- Ans.**
1. **Reproduction** : The process by which new living beings resembling their parents produced, is called reproduction.
 2. **Albumin** : A colourless substance which surrounds the yolk is called albumin.
 3. **Metamorphosis** : The eggs of insects go through several stages before becoming adult insects. This process is called metamorphosis.
 4. **Moulting** : The process of shedding of old skin, is called moulting.
 5. **Marsupials** : Animals that carry their babies in their pouch are called marsupials.

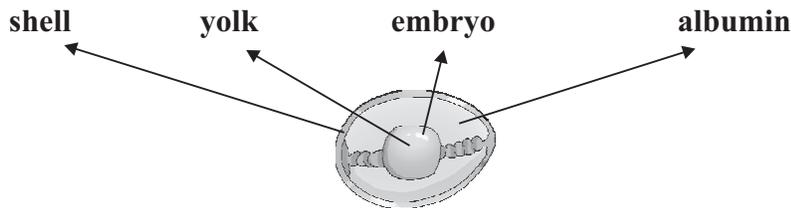
V. Connect the animals with the features they possess :

Ans.



VI. Label the diagram of the egg. Use the words in the list, but first put the letters in the correct orders :

Ans.



VII. Given below are names of some animals. Write them in the correct column :

Ans.

Animals that lay eggs	Animal that produce babies
Snake Hen Butterfly Frog	Lion Tiger Kangaroo Dog

Unit – 4 Health and Nutrition

4

Food, Nutrition and Health

I. Answer the following questions :

Ans.

1. Our body needs energy to work. It gets energy from the food, we eat.
2. Carbohydrates, fats, proteins, vitamins, minerals.
3. Proteins are body-building nutrients. They help the body to grow.
4. Milk contains carbohydrates, fats, proteins, vitamins, minerals and water.
5. Carbohydrates are nutrients that give quick energy to our body. They burn up slowly to provide energy to the body to perform various types of activities.

6. Dietary fibres help the body to get rid of undigested food. It is a part of food that we cannot digest. It has no food value but help to move the waste through the digestive system.
7. Cooking makes food soft, tasty and easy to digest. Cooking kills the germs present in food. Over-cooking can spoil the food and its taste. All the minerals and vitamins are destroyed, if it is over-cooked.
8. Protecting food from germs and spoiling is called food preservation.
9. Canning after boiling, dehydration, salting, sugaring and freezing are some common methods of food preservation.

II. Fill in the blanks :

- Ans.**
1. Carbohydrates and **fats** are energy giving foods.
 2. Vitamins and minerals are **protective** foods.
 3. Over-cooking can **spoil the food and** the taste of the food.
 4. Proteins help our body to **grow**.
 5. Milk is a rich source of vitamin **B** and D.

III. Match the following columns :

- | Ans. | Column 'A' | Column 'B' |
|-------------|-------------------|--|
| | 1. Starch | (b) found in potatoes and rice |
| | 2. Vitamin 'A' | (d) needed for healthy eyes and skin |
| | 3. Protein | (e) found in peas and milk |
| | 4. Fats | (a) give more energy than carbohydrates |
| | 5. Fibres | (c) found in green vegetables |

IV. Name these nutrients :

- | | | |
|-------------|-----------------------------------|----------------------|
| Ans. | 1. It gives you energy. | Carbohydrates |
| | 2. It helps you to grow. | proteins |
| | 3. It protects you from diseases. | vitamin |
| | 4. It keeps your body warm. | fats |
| | 5. It makes blood in your body. | iron |

V. Cross the odd one out. Give reason for your answers :

- | | | |
|-------------|--|---|
| Ans. | 1. Spinach fish banana, apple | Fish is an animal product all other are plants products. |
| | 2. Eggs, bread , cheese, pulses | Bread is not energy giving food, rest are rich sources of protein. |
| | 3. Wheat, rice, sugar , pulses | Sugar is not a primary plant product whereas rest of three are primary plant product. |

4. Oil, butter, ~~meat~~, groundnut Meat is not an example of fat whereas all the other are the examples of fats.

VI. What would happen if you do not take enough of the following :

- Ans.**
1. Iron — **Making of blood will suffer.**
 2. Water — **Digestive system will suffer.**
 3. Roughage — **Digestive system will suffer.**
 4. Calcium — **Bones and teeth will become weak.**
 5. Milk — **Weakness will occur in body.**

VII. Write two food items to eat, if you need the following :

- Ans.**
- | | | |
|------------------|----------------|---------------|
| 1. Calcium | milk | cheese |
| 2. Carbohydrates | banana | potato |
| 3. Vitamins | orange | lemon |
| 4. Iron | spinach | nuts |
| 5. Proteins | cheese | pulses |

VIII. Tick (✓) the correct option :

- Ans.**
1. Which of the following should be eaten raw?

(a) potatoes	<input type="checkbox"/>	(b) cereals	<input type="checkbox"/>
(c) salt	<input type="checkbox"/>	(d) fruits	<input checked="" type="checkbox"/>
 2. Dietary fibres can be found in :

(a) salt	<input type="checkbox"/>	(b) pulses	<input type="checkbox"/>
(c) grapes	<input checked="" type="checkbox"/>	(d) milk	<input type="checkbox"/>
 3. Idli is cooked by :

(a) baking	<input type="checkbox"/>	(b) steaming	<input checked="" type="checkbox"/>
(c) boiling	<input type="checkbox"/>	(d) frying	<input type="checkbox"/>
 4. This vitamin is made by the skin in sunlight :

(a) Vitamin A	<input type="checkbox"/>	(b) Vitamin B	<input type="checkbox"/>
(c) Vitamin C	<input type="checkbox"/>	(d) Vitamin D	<input checked="" type="checkbox"/>
 5. Which of the following is a complete food?

(a) milk	<input checked="" type="checkbox"/>	(b) fruits	<input type="checkbox"/>
(c) vegetables	<input type="checkbox"/>	(d) cereals	<input type="checkbox"/>

IX. Which nutrient am I?

- Ans.**
1. I am a mineral. Take me to make your bones and teeth strong. **calcium**
 2. I help you to grow and repair damaged body parts. **protein**
 3. I keep you warm. **fat**
 4. If you need quick energy. I am the one you need. **carbohydrate**
 5. My name starts with 'V' and help you fight against diseases. **vitamin**

A Balanced Diet and Digestion of Food

I. Answer the following questions :

- Ans.**
1. A diet that contains all the nutrients in the right amount is called a balanced diet. It is good to take balanced diet because it helps us to stay healthy.
 2. The process by which useful substances in the food are broken into fine particles, is called digestion. Mouth, food-pipe, stomach, liver, pancreas, small and large intestines are the main organs of it.
 3. The saliva is produced by the salivary glands. It makes the food soft so that it can be swallowed easily. Saliva also breaks down the starch present in food into easily digestible substances.
 4. It is broken down into smaller pieces by our front teeth. The back teeth grind the food to a paste which moves with the saliva in the mouth.
 5. In the small intestine some more digestive juices called bile get mixed with the food. Digestive juices come to small intestine from liver and pancreas. These juices help in digesting carbohydrates, proteins and fats present in the food. Digestion of food is completed in the small intestine. The juices break down the food further to complete the process of digestion. The food is now in liquid form. It is absorbed into the blood through the walls of the small intestine.
 6. The blood takes food to all the cells in the body through the blood vessels.
 7. Saving food from getting spoiled is called preservation of food.
Different methods of it are as following :
 - (i) **Boiling** : It kills the germs present in the liquid.
 - (ii) **Freezing** : The low temperature inside the refrigerator does not allow the growth of germs.
 - (iii) **Canning** : Juices are put in cans after removing the germs from them.
 - (iv) **Dehydration** : Food items are dried to remove the moisture. This way, germs cannot breed and food can be preserved for a long time.
 - (v) **Adding preservatives** : Preservatives like salt, sugar, oil, vinegar etc., are added to some foods to slow down the growth of the germs.
 8. The undigested food is thrown out of the body in the form of faeces.

II. Fill in the blanks :

- Ans.**
1. The liver produces digestive juice called **bile**.
 2. The stomach produces **acid** which kills the bacteria present in the food.
 3. **Saliva** in the mouth helps to soften food.
 4. The large intestine absorbs the **water** from the wastes and sends the solid part of it out of the body as **faeces**.

III. Write the functions of the following in relation to digestion to food :

- Ans.**
- 1. Mouth :** When we eat food, it is broken down into smaller pieces by our front teeth. The back teeth grind the food to a paste which moves with the saliva in the mouth.
 - 2. Stomach :** The stomach churns food all the time and changes it into a fine paste. The stomach produces acid which gets mixed with the food. It kills germs that may be present in the food.
 - 3. Liver and pancreas :** Digestive juices come to small intestine from liver and pancreas. These juices help in digesting carbohydrates, proteins and fats present in the food.

IV. What would happen in the following situations :

- Ans.**
- You do not eat a balanced diet. **Body will get weakened**
 - Your mother washes fruits after cutting them. **Nutrients get washed**
 - Milk is not kept in the refrigerator. **It will become sour**
 - Salt and oil is not added to the pickles. **Pickles will spoil**
 - You eat chocolates and sweets and then don't brush your teeth. **Bad breath and toothache will take place.**

V. Match the following columns :

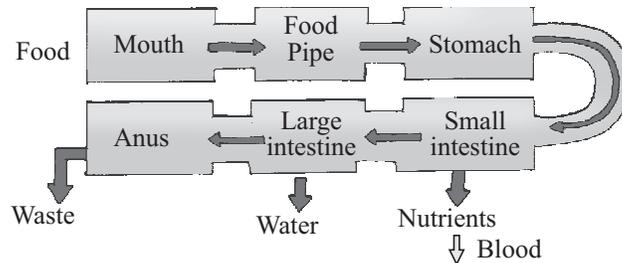
- Ans.**
- | Column 'A' | Column 'B' |
|-------------------------|-----------------|
| 1. Adding preservatives | (d) packed peas |
| 2. Canning | (a) fresh juice |
| 3. Drying | (e) pickles |
| 4. Freezing | (b) meal |
| 5. Boiling | (c) milk |

VI. Tick (✓) the correct option :

- Ans.**
- From the mouth, the food goes to :
(a) food-pipe (b) liver
(c) stomach (d) pancreas
 - Digestion of food in the human body begins from :
(a) stomach (b) mouth
(c) small intestine (d) large intestine
 - Saliva mixes with the food in :
(a) stomach (b) mouth
(c) large intestine (d) food-pipe
 - A diet which contains all the nutrients in correct amount is called a :
(a) rich diet (b) healthy diet
(c) balanced diet (d) fresh diet
 - Water from the undigested food enters the blood vessels in the :
(a) mouth (b) food-pipe
(c) large intestine (d) small intestine

VII. Each box in the diagram represents an organ of the human body. Name the organ to describe the path of food in the body.

Ans.



Unit – 5 Teeth and Their Care

6

Teeth and Microbes

I. Answer the following questions :

- Ans.
1. Milk teeth or temporary teeth.
 2. Around six years old age.
 3. Canine.
 4. By keeping teeth and gums clean and taking proper food.
 5. Microbes are very tiny living beings. They cause many diseases in human beings. They are : bacteria, virus, protozoa and fungi.
 6. A tooth has three parts. They are : crown, neck and root. The crown grows and comes out of the gum. Below the crown is the long root of the tooth. The outermost white part of the tooth is called the enamel. A tooth has three layers. The outermost layer is called the enamel. It is the hardest substance in our body. Below the enamel is the dentine. Inside the dentine is the soft pulp. It has nerves and blood vessels. The nerves are connected to the gum through a hole in the root.
 7. Disease causing bacteria are also called germs.
 - (i) Some bacteria change milk into curd.
 - (ii) Some bacteria digest roughages in animals.
 - (iii) Some bacteria produce vitamins in our body.
 8. It will decay teeth. Small bits of food get stuck in the teeth. Germs appear on these bits of food. These germs form holes or cavities on the tooth enamel. Over time, these cavities become bigger. When the cavity reaches the nerves in the pulp, the tooth starts paining.

II. Fill in the blanks :

- Ans.
1. A hole in the tooth is called a **cavity**.
 2. A healthy tooth is held firmly between the gums by a **cement** like material.

3. The outer layer of the tooth is called **enamel**.
4. The part of the tooth that grows out of the gums is called the **crown**.
5. You must always use a **soft tooth-brush** to brush teeth.
6. **Fungi** are plants which grow on decaying matter.
7. **Acid** can spoil germs and loosen the tooth.
8. Malaria and dysentery are caused by **protozoa**.

III. Match the following columns :

Ans.	Column 'A'	Column 'B'
	1. Pulp	(c) the soft inner part of a tooth
	2. Dentine	(a) the part of a tooth which is like a bone
	3. Decay	(f) rotting of the tooth
	4. Dentist	(e) a person who checks and looks after teeth
	5. Incisor	(d) a tooth used for cutting food
	6. Crown	(b) the part of a tooth sting out of the gum

IV. Answer the following questions in a word :

Ans.	1. A hole in a tooth	cavity
	2. Soft material present inside the dentine	pulp
	3. The uppermost part of a tooth	crown
	4. What do germs produce after feeding on sugar	acid
	5. What do germs feed on	sugar

V. Match the teeth with their functions :

Ans.	A	B
	1. Incisors	(c) bite food
	2. Pre-molar and molars	(b) grind food and convert it into a fine paste
	3. Canine	(a) tear food

I. Answer the following questions :

- Ans.**
1. Clothes protect us from heat, cold, rain, dust and insects. They are also used to decorate our personality.
 2. Early man used barks, leaves of trees and skin of animals to cover his body.
 3. Three kinds : protective, decorative and uniforms.
 4. **Natural Fibres**
 - (i) They are obtained from plants and animals.
 - (ii) Clothes of natural fibres are comfortable.
 - Synthetic fibres**
 - (i) They are not obtained from plants and animals.
 - (ii) Clothes of synthetic fibres do not absorb sweat.

5. Helmet, cap, hat.
6. We should wear loose cotton clothes in summer season.
7. We use shoes to protect our feet.
8. Once the season is over, woollen and silk must be kept in the sunshine. Then moth balls or dried neem leaves must be placed with them to keep the insects away.
9. We should take care of our clothes to make them last longer and look clean.

II. Fill in the the blanks :

- Ans.**
1. Clothes are of three kinds : protective, decorative and **uniforms**.
 2. **Cotton** is obtained from the cotton plants.
 3. We look **smart** and cultured when we wear suitable clothes.
 4. Moth balls and dried neem leaves keep **insects** away.
 5. Clothes should be washed **properly** and stored well.
 6. **Nylon** and **polyester** are synthetic fibres.
 7. Silk fibres are obtained from an insect called **silkworm**.
 8. Insects such as **silver fish** damage woollen clothes.

III. Write whether the following statements are 'true' or 'false' :

- | | | |
|-------------|---|--------------|
| Ans. | 1. Wool is a man-made fibre. | False |
| | 2. Moth balls are put while storing woollen clothes. | True |
| | 3. Synthetic fibres absorb sweat quickly. | False |
| | 4. Talcum powder removes ink stains. | True |
| | 5. We wear woollen clothes in rainy season. | False |
| | 6. The machine for weaving a cloth is called a loom. | True |
| | 7. Wool is obtained from cocoon. | False |
| | 8. People wear shoes and socks to protect their feet. | True |

IV. Match the following columns :

- | | | |
|-------------|-------------------|----------------------------------|
| Ans. | Column 'A' | Column 'B' |
| | 1. Natural fibre | (c) cotton |
| | 2. Winter season | (a) warm clothes |
| | 3. Summer season | (b) loose fitting clothes |
| | 4. Nurse | (e) white uniform |
| | 5. Early man | (d) leaves |

V. Tick (✓) which of the following are best suited for summers :

- | | | | | |
|-------------|--------------------------|-------------------------------------|-----------------|-------------------------------------|
| Ans. | • light-coloured clothes | <input checked="" type="checkbox"/> | • thick clothes | <input type="checkbox"/> |
| | • dark-coloured clothes | <input type="checkbox"/> | • thin clothes | <input checked="" type="checkbox"/> |
| | • tight clothes | <input type="checkbox"/> | • loose clothes | <input checked="" type="checkbox"/> |

Now You Do

Pictures given below are from different states of India. Read the clues and write the name of the states they come from.

Ans.



Rajasthan



Maharashtra



Punjab



West Bengal

Unit – 7 Our Universe

8

The Solar System

I. Answer the following questions :

Ans.

1. Star

- (i) It is a ball of gases.
- (ii) It has its own light and heat.

(iii) It remains stationary.

- 2. The sun and eight planets their satellites make up the solar system.
- 3. Scientists believe that billion of years ago, a huge ball-shaped structure exploded with a big bang. Many small structures were formed from it. One of these structures was the Earth. It was a ball of fire, dust and hot gases. For billions of years it kept spinning. While spinning, its outer surface became cold and hard. Some gases escaped from it, whereas others were trapped inside. So the outer surface of the Earth is hard while its inner surface is hot and soft.
- 4. Seasons are caused due to the revolution of the earth.
- 5. 24 hours, and one year.
- 6. Hot gases.
- 7. It is a ball of rocks. It does not have its own light and heat. It revolves around sun.
- 8. Do it yourself.
- 9. Any natural object that revolves around a planet, is known as the satellite of the planet.

Planet

- (i) It is a ball of rocks.
- (ii) It does not have its own light and heat.

(iii) It moves around a star.

II. Write whether the following statements are 'true' or 'false' :

Ans.

- 1. The rotation of the Earth causes day and night.
- 2. The Earth is the largest planet.
- 3. The sun is a star.
- 4. Planets have light and heat of their own.
- 5. Planets move along a fixed path.
- 6. The outer most layer of the Earth is called the crust.

True

False

True

False

True

True

7. Lava flows out when the volcano erupts.

True

8. Stars move from one place to another.

False

III. Match the following columns :

Ans. Column 'A'

1. Mars
2. Jupiter
3. Saturn
4. Mercury
5. Uranus

Column 'B'

- (d) Red planet
- (c) largest planet
- (b) Planet with over 1000 rings
- (e) Fastest revolving planet
- (a) Bluish planet

IV. Which planet am I?

- Ans.**
1. Life is possible only on me.
 2. I am called the morning star.
 3. I have 16 known moons.
 4. I am farthest from the sun.
 5. I am also called the Red planet.

Earth
Venus
Jupiter
Neptune
Mars

V. Give reasons for the following :

- Ans.**
1. 3/4 part of earth's surface is covered by water.
 2. It has hot gases.
 3. India and America are on opposite sides.
 4. Because the Earth moves.

VI. Name the following :

- Ans.**
1. An imaginary line passing through the Earth from the north. **axis**
 2. Definite path along which a planet revolves around the sun. **orbit**
 3. A natural object made up of a large amount of gas which burns. **star**
 4. A natural object that revolves around a planet. **satellite**
 5. Natural object like the Earth that revolves around the sun. **planet**

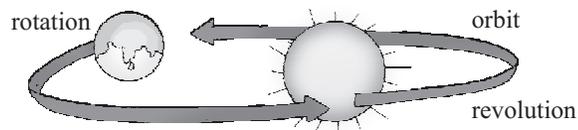
VII. Explain the following :

- Ans.**
1. Earth rotates on its axis and revolves around the sun. Rotation causes day and night, and revolution causes different seasons.
 2. The sun, eight planets and satellites form the solar system.
 3. A natural object that revolves around a planet, is known as the satellite of that planet. For example the moon revolves around the earth. Therefore the moon is earth's natural satellite.

VIII. Make diagrams of (i) Rotation of the Earth and (ii) Revolution of the Earth.

From the information given in the pictures you drew, write a few lines on :

- Ans.**
1. It causes day and night.
 2. It causes different seasons on earth.



Revolution of the earth

I. Answer the following questions :

- Ans.**
1. When we breathe in polluted air, harmful substances enter our body. This affects our lungs and respiratory system. It causes cough, cold and other breathing problems.
 2. It pollutes river and other water resources.
 3. Adding harmful substances to the environment, is called pollution.
 4. Smoke given out from power plants, oil refineries etc. contain many harmful gases. When these go up, they mix with the clouds and form harmful substances called acids. When it rains, they falls as acid rain.
 5.
 - (i) Sewage pipes should be laid away from pipes carrying drinking water.
 - (ii) Waste water from homes should not be allowed to enter wells and other sources of drinking water.
 - (iii) Factories should be prevented from throwing water into rivers and seas.
 - (iv) Plastic bags, bottles, metal cans etc. should not be thrown in the water sources.
 6. Do yourself.

II. Fill in the blanks :

- Ans.**
1. All animals and plants have their own **environment**.
 2. Trees **purify** the air.
 3. The process of soil being washed away by wind or rain is called **soil erosion**.
 4. Drinking polluted water can cause **diseases**.
 5. The World **Environment** Day is celebrated on 5th June every year.

III. Write whether the following statement are 'true' or 'false' :

- Ans.**
- | | |
|--|--------------|
| 1. Acid rain pollutes our environment. | True |
| 2. Pollution is bad for our environment. | True |
| 3. Trees play no role in air pollution. | False |
| 4. Acid rain damages the soil in which crops grow. | True |
| 5. We obtain all our basic needs from the environment. | True |

Matter and Materials

I. Answer the following questions :

- Ans.**
1. Anything that occupies space and has mass (weight), is called matter. It is made up of very tiny particles called molecules. Molecules are made up of still smaller particles called atoms.
 2. Solid, liquid and gaseous state. Solid state has definite shape and volume. Liquid state has definite volume but not specific shape. Gaseous state has neither specific shape nor specific volume.
 3. Properties of matter help us to recognise the different types of matter.
 4. The sugar molecules fit in the empty spaces between loosely packed molecules of liquid (water).
 5. Process of separating heavy particles in a liquid by allowing the mixture to stand for some time is called sedimentation. Separating the liquid without disturbing the heavy particles of the mixture by pouring it carefully is called decantation.
 6. When milk is put in the freezer, it changes into a solid called ice-cream. This process is called freezing.
Take out the ice cream from freezer and let the heat of the atmosphere increase the temperature of the ice-cream. The solid ice-cream then turns into a liquid. This process is called melting.
 7. Liquids can flow but solids cannot because molecules in liquids are loosely packed while in solids molecules are closely packed.
 8. The solution that cannot dissolve any more solute, is called a saturated solution. To get salt from sea water, it is filled in shallow trenches and left in the sun. The water evaporates slowly. When all the water in the trenches has been evaporated, big crystals of salt are left behind. These big crystals are ground into a fine powder, packed and sent to the market for sale.

II. Fill in the blanks :

- Ans.**
1. Wax gets dissolved in **air**.
 2. Soda water contains **carbon dioxide** gas.
 3. Molecules occupy **space** and have **mass**.
 4. Matter exists in **three** states.
 5. Molecules in **gas** are very loosely packed.
 6. If a solid is **heated**, it changes into a liquid.
 7. In a solution of sugar and water, sugar is the **solute** and water is the **solvent**.
 8. Molecules are made up of still tinier particles called **atoms**.

III. Match the following columns :

Ans.	Column 'A'	Column 'B'
	1. iron	(b) conducts heat
	2. oxygen	(i) helps in burning
	3. rubber	(a) is soft
	4. glass	(c) breaks easily
	5. ice	(f) is a solid form of water
	6. sand	(e) is insoluble in water
	7. sugar	(h) dissolves in water
	8. kerosene	(d) is inflammable
	9. water	(g) is colourless

IV. Write whether the following statements are 'true' or 'false'

1. Fish use oxygen of the air dissolved in water.	True
2. Glass is a brittle or breakable substance.	True
3. Sand and chalk are soluble in water.	False
4. Ice is the solid form of water.	True
5. On being pressed, rubber changes its shape.	True
6. Liquids flow from a higher level to a lower level.	True
7. Plastic is a good conductor of heat.	False
8. Solids have a definite shape and volume.	True

V. Give reasons for the following :

- Ans.**
1. Sugar molecules fit in the spaces between loosely packed molecules of liquid.
 2. They directly change into gas.
 3. It is a solid thing.
 4. It is gas and so freely moves.
 5. Because it is a liquid.

VI. Write the state in which matter exists in the following :

Ans.	1. smoke	gas	5. candle	solid
	2. hailstones	solid	6. oil	liquid
	3. snow	solid	7. sand	solid
	4. steam	gas	8. honey	liquid

VII. Classify the following into water soluble and insoluble groups :

- Ans.** **Water soluble :** sugar, common salt, washing soda, potassium permanganate.
Insoluble : marble, sand, soil, chalk, sulphur blue vitriol.

Now You Do

2. You are given some hints about the words to be filled in boxes in the cross-word given below. Read the hints carefully and solve the puzzle.

Ans.



Unit – 9 Air, Water and Weather

11

Weather : The Changing Scene

I. Answer the following questions :

- Ans.
1. The sun causes the movement of air to make a wind or breeze and evaporation of water to make clouds and rain. Thus, the sun is the controller of weather.
 2. At evening or morning time we receive slanting rays while at noon we receive direct rays. Due to this it is more hotter at noon.
 3. Water absorbs and loses heat more slowly than sand or land. So, the sea water is warm even after the sunset.
 4. When air blows from sea to land during the day, it is called sea-breeze. During the day air above the sea heats up slowly than the air above the land. So air above land moves upwards. To fill this space cool air above the sea moves towards land thereby causing sea breeze.
 5. It becomes light and moves up.
 6. Changing of water into water vapour due to heat is called evaporation. Change of vapours into liquid after getting cooled is known as condensation.
 7. (a) **Dew** : When the moist air touches the grass, leaves or flowers, its water vapour gets cooled and condense there into water droplets called dew.

(b) Fog : Sometimes in winters, the water vapour present near the earth's surface condense on the smoke or dust particles which become fog.

(c) Frost : When it is very cold the dew or surface water freezes into tiny white crystals. It is called frost.

8. High temperature, blowing air, greater surface area and humidity in air.
9. When the sun shines, water from lakes, seas, rivers etc. changes into water vapour and evaporates. In the sky it condenses to form small drops of water. These small drops of water join together to form clouds. When these clouds pass through cooler air, they get cooled further. The water drops become heavier. When the water drops become very heavy, they fall to the earth as rain. This is called precipitation. This cycle of evaporation, condensation and precipitation goes on continuously. It is called the water cycle.
10. Seasons affect our lives in a big way. In summer, we arrange to keep our body cool while in winter, we arrange to keep our body warm. Seasons affect the lives of other animals and plants also. Animals like frogs, turtles and earthworms become more active in the rainy season. But they go deep into the mud during water and remain inactive to save themselves from excessive cold. This is called winter sleep. Plants shed their leaves before winter. New leaves grow during the rainy season.

II. Fill in the blanks :

- Ans.**
1. Frost and hailstones are harmful to our **crops**.
 2. **Evaporation** takes place all the time.
 3. Land gets heated **faster** than water.
 4. **Land** breeze blows at night while **sea** breeze blows during the day.
 5. **Snow** are particles of ice in the form of balls.
 6. If ice crystals do not melt, they fall on **earth**.
 7. We see **dew** drops early in the morning after a cold night on leaves.
 8. **Dew** is not formed in the cloudy nights.

III. Write whether the following statements are 'true' or 'false' :

- Ans.**
- | | |
|---|--------------|
| 1. Sand gets heated more quickly than water. | True |
| 2. The sun gives us heat and light. | True |
| 3. On cooling, water vapour condenses into water-drops. | True |
| 4. The sun play an important role in the change of weather. | True |
| 5. Sea breeze blows during the night. | False |
| 6. We can't see the wind, but we can see its affect. | True |
| 7. The part that has summer, has shorter days. | False |
| 8. Dew and frost are formed on the surface of the earth. | True |

IV. Match the following columns :

- | | | |
|-------------|-------------------|---------------------------|
| Ans. | Column 'A' | Column 'B' |
| | 1. Morning | (c) slanting sun rays |
| | 2. Noon | (b) direct sun rays |
| | 3. Water | (a) heated slowly |
| | 4. Sun | (d) controller of weather |
| | 5. Sand | (f) heated quickly |
| | 6. Hot air | (e) goes up |

V. Give reason for the following :

- Ans.**
1. Sun rays are slanting.
 2. Due to condensation of moisture.
 3. Due to formation of dew.
 4. Due to tilt of earth at an angle.
 5. Higher temperature favours faster rate of evaporation.

VI. Tick (✓) the correct option :

- Ans.**
1. Wet clothes dry more quickly in :
(a) calm air (b) vacuum
(c) fast blowing air (d) fast moving air
 2. When does the sun rise in winters?
(a) at 5.00 a.m. (b) at 7.00 a.m.
(c) at 9.00 a.m. (d) at 10.00 a.m.
 3. Which of the following are formed on the surface of the earth?
(a) dew and frost (b) fog and rain
(c) hailstones and snow (d) snow and rain
 4. Sea breeze blows from :
(a) sea to the land (b) land to the sea
(c) sea to the sea (d) land to the land

Force, Work and Energy

I. Answer the following questions :

- Ans.**
1. Pushing an object, pulling an object and stopping a moving object.
 2. Heat energy-cook food, electrical energy-lighting bulb, light energy-solar cells.
 3. Because it provides us heat and light energy.
 4. It is a type of push or pull applied on a body. When we use force to move on object through some distance, we say work is done.

5. Energy is the capacity to do work. We get energy from food we eat.
6. A force which stops the motion of a moving body on a rough surface is called force of friction.
7. Energy of sun is called solar energy.
Electric energy is used :
 - (i) to run machines
 - (ii) to run trains
 - (iii) to light bulbs.
9. Machines make our tasks easy. With their help a work can be done with less effort.
Machines are of two types :
 - (i) Simple machines-knife, blade, needle, etc.
 - (ii) Complex machines-bus, cycle, washing machine, etc.

II. Fill in the blanks :

- Ans.**
1. **Force** is needed to move an object.
 2. **Energy** is used when force is applied.
 3. **Electrical** energy is used to operate heater.
 4. When we eat food, it changes into **muscular** energy.
 5. **Machines** are used to make our tasks easy.
 6. A **railway engine** gets its energy from steam.
 7. **Moving** water has energy. It can rotate a wheel.
 8. To stop the motion of a body, we should apply **force** against the direction of its motion.

III. Write whether the following statements are 'true' or 'false' :

- | | | |
|-------------|---|--------------|
| Ans. | 1. Still air has capacity to do work. | False |
| | 2. Moving water cannot exert force. | False |
| | 3. Steam contains heat energy. | False |
| | 4. Energy cannot be converted from one form into another. | False |
| | 5. One form of energy can do only one type of work. | False |
| | 6. All machines are very simple. | False |
| | 7. Wind energy helps a sailboat move. | True |
| | 8. Food contains chemical energy. | True |

IV. Match the following columns :

- | Ans. | Column 'A' | Column 'B' |
|-------------|-------------------|-------------------|
| | 1. Transistor | (f) cell |
| | 2. Tubewell | (d) electricity |
| | 3. Bullock-cart | (b) muscles |
| | 4. Railway engine | (e) steam |
| | 5. Water-mill | (c) moving water |
| | 6. Wind-mill | (g) moving wind |
| | 7. Car | (a) petrol |

V. Name the form of energy that :

- Ans.**
1. is used to cook food.
 2. is used to run an air-conditioner.
 3. is used to run a car.
 4. is used by plants to prepare food.
 5. is used to run a bicycle

heat energy
electrical energy
chemical energy
light energy
muscular energy

VI. What will happen if :

- Ans.**
1. Everything will float in air.
 2. It will move to a longer distance.
 3. It will make us weak.
 4. The life of all living beings will come to an end.

VII. Name the sources of energy required to :

- Ans.**
1. Run a wind-mill **wind energy**
 2. Generate electricity in a dam. **water energy**
 3. Cook food in a solar system. **solar energy**
 4. Run a steam engine. **steam energy**