

ICSE Science 3

1

Living and Nonliving Things

ANSWERS

CHECK POINT 1

1. Pencil 2. Sunflower

CHECK POINT 2

1. Lungs 2. Stomata 3. Excretion

PRACTICE TIME

A. 1. (F) 2. (T) 3. (T) 4. (F)

B. 1. (a) 2. (b) 3. (b)

C. 1. eggs 2. food 3. nonliving 4. grow 5. gills

D. 1. Living things grow, move, need food, reproduce, feel, breathe and excrete.

2. Animals move with the help of their legs, birds fly with the help of their wings and fish swim using their fins.

3. We need food to live and grow.

4. Plants make their food in the presence of sunlight, using water and carbon dioxide gas.

5. The removal of waste from the body is called excretion.

E. 1. GROWTH 2. EXCRETION 3. REPRODUCTION 4. BREATHING 5. FEELING

THINK ZONE

1. A car does not move at its own. It is moved by the force of the engine.

2. A toy monkey cannot climb a tree on its own because it is a nonliving thing.

3. A plant will die if all its leaves are removed because without leaves it cannot make its food.

2

Human Body

ANSWERS

CHECK POINT 1

1. Brain 2. Lungs 3. Kidneys 4. Stomach

CHECK POINT 2

1. respiratory 2. mucus 3. tube-like 4. Diaphragm

CHECK POINT 3

1. CNG 2. Bronchitis 3. Car

PRACTICE TIME

A. 1. (T) 2. (T) 3. (F) 4. (T) 5. (T)

B. 1. (c) 2. (b) 3. (c) 4. (a) 5. (d)

C. 1. Lungs 2. Cerebrum 3. Cerebellum 4. heart 5. diaphragm

D. 1. The five sense organs are eyes, ears, nose, tongue and skin.

2. Medulla of brain controls breathing, heartbeats and muscle movements in the digestive system.

3. Liver is located on the right side of the stomach. It produces bile juice and cleans our blood.

4. The small intestine digests and absorbs the food while the large intestine absorbs water and excretes the solid waste.

5. Lungs are the main organs of respiration.

6. The process of breathing in is called inhalation while the process of breathing out is called exhalation.

7. Deep breathing is a way to relax our body and mind.

8. The presence of unwanted and harmful materials in the air is called air pollution.

Dust and smoke from factories and moving vehicles are some causes of air pollution.

9. Air pollution has following effects:

(a) Air pollution causes allergies and respiratory disorders.

- (b) It causes irritation of eyes, nose and throat.
- (c) It kills plants and trees.
- (d) It causes global warming.

E. 1. (d) 2. (a) 3. (e) 4. (c) 5. (b)

THINK ZONE

1. Brain is called the control centre of the body because it controls the working of all the organ systems of the body.
2. The human respiratory system is called gas exchange system because we take in oxygen and give out carbon dioxide through it.
3. Plants help in reducing air pollution by taking carbon dioxide from air and releasing oxygen into it.

3

Birds

ANSWERS

CHECK POINT 1

1. Down feathers 2. Oil glands 3. Streamlined

CHECK POINT 2

1. Climbing 2. Scratching 3. Grasping 4. Swimming

CHECK POINT 3

1. (b) 2. (c) 3. (a)

PRACTICE TIME

A. 1. (F) 2. (F) 3. (F) 4. (F) 5. (T)

B. 1. (c) 2. (a) 3. (c) 4. (c) 5. (a) 6. (b)

C. 1. sharp 2. webbed 3. flight 4. cavity 5. cup

D. 1. Aquatic birds have following special features:

- (a) Aquatic birds have oil glands in their skin which save their feathers from rotting.
 - (b) They have flat and broad beak with holes on the sides. Such beaks strain their food from muddy water.
 - (c) Ducks and swans have webbed feet which help them in swimming.
 - (d) Cranes and flamingoes have long and spread-out toes which help them to walk on muddy water.
2. The hollow bones of flying birds are filled with air which makes their body light.
3. An ostrich cannot fly because it has heavy and solid bones. Its body is heavy and has more feathers on it.
4. Birds make nests to lay eggs and bring up their young ones.
5. A tailor bird makes its nest by sewing two or three leaves together with its needle-like beak.

THINK ZONE

1. A duck has flat and broad beak with tiny holes on sides to strain its food from muddy water.
2. The streamlined shape of aeroplanes help them fly in the air easily.
3. The parent birds sit on their eggs to keep them warm till the babies inside are fully developed.

4

Common Insects

ANSWERS

CHECK POINT 1

1. legs 2. wings 3. Head 4. spiracles

CHECK POINT 2

1. Egg, larva, pupa and adult. 2. Ant, Bee 3. Housefly 4. In covered dustbins.

PRACTICE TIME

A. 1. (T) 2. (F) 3. (T) 4. (T) 5. (F)

B. 1. (b) 2. (b) 3. (c) 4. (c) 5. (d)

C. 1. creep 2. two 3. eleven 4. caterpillar 5. six

D. 1. Insects are small animals found flying or creeping on the ground. Housefly, butterfly, honeybee, ant, etc. are some insects.

2. Insects are found everywhere, i.e., in air, water and soil.

3. Head, thorax and abdomen are the main body parts of insects.

4. Insects breathe with the help of spiracles.

5. The life cycle of a butterfly is completed in four stages. These stages are egg, larva, pupa and adult.

A butterfly lays eggs on the leaves of plants. Each egg hatches into a young larva called caterpillar. A caterpillar changes into pupa. A pupa changes into an adult butterfly.

6. The three important characteristics of insects are:

(a) All insects have six legs.

(b) The body of all insects is divided into head, thorax and abdomen.

(c) All insects breathe through spiracles.

7. The five harmful effects of insects are:

(a) Insects such as termites damage wooden doors, windows, etc.

(b) Mosquitoes bite people and spread diseases such as malaria, dengue, etc.

(c) Lice and bedbugs bite and suck human blood.

- (d) Houseflies and cockroaches live in dirty places and spread many diseases.
 - (e) Ants, wasps, etc. may bite or sting people.
8. Insects can be kept away by following ways:
- (a) Use insect repellents.
 - (b) Keep the house and drains clean.
 - (c) Keep the garbage in covered dustbins.
 - (d) Doors and windows should be fitted with wiremesh.
 - (e) Do not litter and keep the surroundings clean.
- E. 1. Ants; because they do not suck blood while others do.
2. Beetles; because they are not social insects while others are.
3. Termite; because it is an insect while others are diseases spread by mosquitoes.

THINK ZONE

1. The thorax of an insect is formed of three segments. Each segment has a pair of legs. Thus, there are three pairs of legs or six legs in the thorax of an insect.
2. Honeybees collect nectar from flowers and make honey. So, they are useful insects.
3. Ants are called social insects because they live in groups called colonies and divide work among themselves.

5

Plants in the Surroundings

ANSWERS

CHECK POINT 1

1. (T) 2. (F) 3. (T)

CHECK POINT 2

1. stomata 2. carbon dioxide 3. reproductive 4. Fruits 5. seeds

CHECK POINT 3

1. Water 2. Radicle 3. Plumule 4. Insecticides

PRACTICE TIME

A. 1. (F) 2. (T) 3. (F) 4. (F) 5. (F)

B. 1. (c) 2. (b) 3. (c) 4. (a) 5. (a)

C. 1. tap, fibrous 2. Leaf 3. plumule 4. fruit 5. seed 6. seed germination

D. 1. Root, stem, leaves, flowers and fruits are different parts of a plant.

2. A fibrous root has a number of thread-like roots growing from the base of stem while a tap root has a single main root which gives out many small branches.

3. The roots hold the plant firmly in the soil and absorb water and nutrients from the soil for plant.

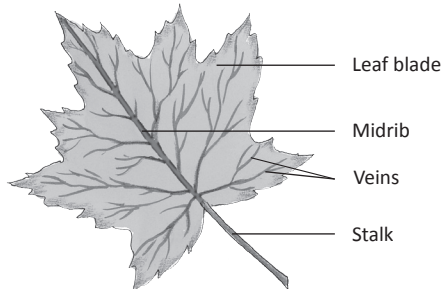
4. A stem has following functions:

(a) The stem helps a plant stand erect.

(b) It carries water and nutrients from roots to leaves, flowers and fruits.

(c) It carries food made by the leaves to all parts of the plant.

5.



6. Stomata help the plant in breathing by taking in and giving out air.
 7. A seed has a hard outer covering called seed coat, seed leaves and a baby plant inside it.
 8. Air, water and warmth are needed for the germination of a seed.
- E. 1. Leaf blade 2. Root 3. Fruit 4. Seed

THINK ZONE

1. Plants should not be kept in closed rooms because in closed rooms, they would not get sunlight for photosynthesis.
2. Flowers are called the reproductive part of a plant because they form seeds and hence, help the plant to give rise to new plants.
3. All seeds of a plant do not get proper air, water and warmth. Therefore, all seeds do not grow into new plants.

6

Food We Get from Plants

ANSWERS

CHECK POINT 1

1. Coriander
2. Trees and shrubs
3. Yes
4. Climbers have weak stems. Therefore, they cannot stand straight.
5. Creepers

CHECK POINT 2

1. (c) 2. (a) 3. (d) 4. (b)

PRACTICE TIME

A. 1. (F) 2. (T) 3. (T) 4. (F) 5. (T)

B. 1. (d) 2. (b) 3. (a) 4. (b) 5. (b)

C. 1. herbs 2. climber 3. root 4. groundnut 5. seeds

D. 1. Mango, Neem.

2. Herbs are very small plants with thin, green and soft stems. They are seasonal plants and live for a few months.

3. Pea and grapevine are climbers. They grow with the help of a support.

4. Leaves, roots, fruits, seeds and flowers of plants are eaten as food.

5. Leaves of Neem and Tulsi have medicinal value.

6. Green leafy vegetables such as spinach, lettuce, cabbage, mint, etc. are rich sources of iron and vitamin A.

7. The fruits of tomato, brinjal, cucumber and pumpkin are eaten as vegetable.

E. **DOWN** 2. **ROOT** 3. **BRINJAL** 5. **APPLE**

ACROSS 1. **CARROT** 3. **BROCCOLI** 4. **CASTOR** 6. **NEEM** 7. **LETTUCE**

F.

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

THINK ZONE

1. Many herbs are used in medicines to treat many diseases. Therefore, herbs are called medicinal plants.
2. Climbers have weak stems. Therefore, they need support to stand.
3. Spices are important ingredients of food because they add flavour to our food. Most spices also have medicinal value.

7

Forms of Matter: Solids, Liquids and Gases

ANSWERS

CHECK POINT 1

1. Yes 2. No 3. Yes 4. No

CHECK POINT 2

1. ice 2. evaporation 3. pencils, furniture, etc. 4. cooking

PRACTICE TIME

A. 1. (T) 2. (F) 3. (F) 4. (F) 5. (T)

B. 1. (c) 2. (a) 3. (d) 4. (d) 5. (d)

C. 1. space, weight 2. atoms 3. molecule 4. solid, liquid, gas

D. 1. Anything which takes up space and has weight is called matter.

2. Solid, liquid and gas are three states of matter.

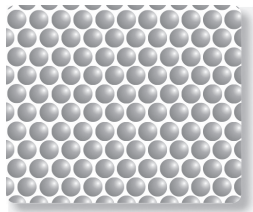
Properties of solids are as follows:

- (a) Solids have definite shape and size.
- (b) They occupy a definite amount of space.
- (c) The molecules of solid lie very close to each other.
- (d) Solids do not flow.

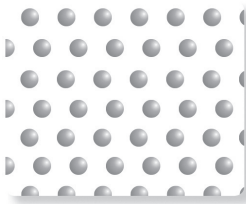
3. The properties of liquids are as follows:

- (a) Liquids do not have a definite shape and size.
- (b) They occupy a definite amount of space.
- (c) The molecules of liquids are loosely packed.
- (d) Liquids can flow.

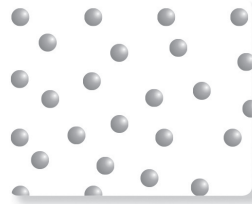
4.



Arrangement of
molecules in solids



Arrangement of
molecules in liquids



Arrangement of
molecules in gases

5. We can smell an *agarbatti* because the molecules of a gas are far apart and easily spread through large spaces.
 6. Changing of water into water vapour is called evaporation. Condensation is the phenomenon opposite to evaporation.
- E.** 1. Water; It is a liquid while others are solids.
2. Ice; It is a solid while others are gases.
3. Butter; It is a solid, while others are liquids.
4. Milk; It is a liquid while others are solids.
- F.** 1. Matter 2. Atom 3. Air 4. Water

THINK ZONE

1. When sugar is dissolved in water, the molecules of sugar take the space between the molecules of water. Therefore, the volume of water does not rise.
2. When wet clothes are spread in the sun, the water from the clothes gets evaporated due to the heat of the sun. Therefore, clothes in the sun become dry.

8

Some Properties of Water

ANSWERS

CHECK POINT 1

1. water 2. three-fourths 3. tasteless 4. solute

CHECK POINT 2

1. (T) 2. (F) 3. (T) 4. (T) 5. (F)

PRACTICE TIME

A. 1. (F) 2. (T) 3. (F) 4. (F) 5. (F)

B. 1. (c) 2. (d) 3. (d) 4. (b)

C. 1. sinks 2. good 3. floats 4. solution 5. stirring

D. 1. All living beings need water to stay alive.

2. About three-fourth part of the earth's surface is covered with water.

3. Steam (water vapour) is the gaseous form of water.

4. Properties of water are as follows:

(a) Water is a clear and transparent liquid.

(b) It has no colour, smell and taste.

(c) It is a good solvent.

(d) It exists in three forms: Solid, liquid and gas.

5. A solid substance which is dissolved in liquid part of a solution is called solute while the liquid part of a solution in which a solid substance is dissolved is called solvent.

6. Following conditions affect making a solution:

(a) Stirring increases the speed of mixing of solute in the solvent.

(b) The solute dissolves easily and faster in warm water.

(c) The solute of smaller particles dissolves faster in a solvent.

7. The substances which dissolve in a liquid are known as soluble substances. For example, salt, sugar, etc. are soluble in water.

The substances which do not dissolve in a liquid are known as insoluble substances. For example, sand, chalk powder, etc. are insoluble in water.

THINK ZONE

1. Water is called a good solvent because it can dissolve many substances in it.
2. Oil is lighter than water. Therefore, it floats in water.

9

Water as a Resource

ANSWERS

CHECK POINT 1

1. Water cycle 2. Clouds 3. Water pollution

CHECK POINT 2

1. decant 2. chlorine 3. tank

PRACTICE TIME

A. 1. (F) 2. (T) 3. (T) 4. (F)

B. 1. (b) 2. (d) 3. (a)

C. 1. polluted 2. evaporation 3. condenses 4. Melting 5. Insoluble

D. 1. The changing of water into solid ice is called freezing.

2. When we heat water, it changes into water vapour.

3. Clouds are formed by the gathering of water droplets high up in the air.

4. Three causes of water impurities are as follows:

(a) Bathing and washing clothes in the rivers.

(b) Waste water from homes and factories mixes in rivers.

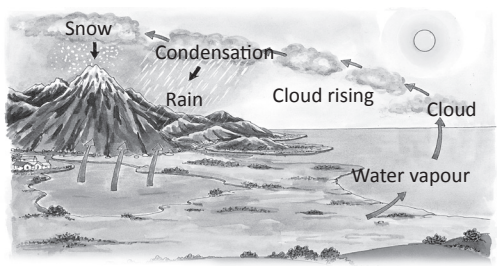
(c) Throwing waste in water.

5. The mixing of unwanted things in water is called water pollution.

The polluted water can be purified for drinking by filtration, boiling and chlorination.

6. Chlorine tablets are mixed with water to kill germs present in it so as to make water drinkable.

7.



Water cycle

8. Collecting and storing rainwater for future use is called rainwater harvesting. By rainwater harvesting, we can avoid the problem of shortage of water.

E. 1. Rain 2. Water 3. Rainwater harvesting

THINK ZONE

1. Factories should be made far away from living areas to keep them free from pollution.
2. Boiling of water kills the germs present in it. Therefore, we should drink boiled water.

The Sun as a Natural Resource

ANSWERS

CHECK POINT

1. star 2. heat 3. Coal

PRACTICE TIME

A. 1. (T) 2. (F) 3. (F) 4. (F) 5. (T)

B. 1. (b) 2. (d) 3. (c) 4. (a)

C. 1. ability 2. leaves 3. pickles 4. water cycle 5. rooftop

D. 1. The sun is a star.

2. The energy obtained from the sun is called solar energy.

3. The uses of solar energy in day-to-day life are as follows:

(a) Solar energy is used for drying wet clothes.

(b) It is used to dry foodgrains, chillies, etc. before storing them.

(c) It is used to make pickles, chips, etc.

(d) It is used in solar cookers, solar water heaters and solar cells.

4. The natural sources which are present in unlimited amount and can be used again and again are called renewable sources of energy. They are the sun, wind and water.

5. The natural sources which are present in limited amount and we cannot use them again and again are called nonrenewable sources of energy. They are coal, petroleum and natural gas.

6. Solar cooker is a device which is used to cook rice, pulses and vegetables by using solar energy.

7. Five measures to conserve energy are:

(a) Switch off lights and fans when not required.

(b) Turn off the TV when not watching it.

(c) Use LED bulbs and CFLs.

(d) Use bicycle or go on foot for short distances.

(e) Use solar water heater for getting hot water and solar cooker for cooking food.

THINK ZONE

1. Plants make their food in the presence of sunlight. They use this food for their growth and other life activities. Therefore, plants grow well in sunlight.
2. Most of the plant leaves are green in colour because they contain a green pigment called chlorophyll.
3. The plants which shed their leaves every year have stored food. In the absence of leaves, they get energy from this stored food.

ANSWERS

CHECK POINT 1

1. Yes 2. No 3. Yes 4. Yes

CHECK POINT 2

1. cloth 2. Clean 3. 2 October 2014

PRACTICE TIME

A. 1. (T) 2. (T) 3. (T) 4. (F) 5. (T)

B. 1. (d) 2. (b) 3. (d) 4. (b) 5. (d)

C. 1. healthy 2. eating 3. fresh 4. sleep 5. spitting

D. 1. Cleanliness means to keep clean.

2. Personal cleanliness keeps dirt, dust and germs away from our body.

3. Following food habits keep us healthy:

(a) Always eat healthy and fresh food.

(b) Eat food at fixed hours.

(c) Chew the food well.

(d) Avoid eating junk food.

4. We need to sleep daily because sleep gives proper rest to our body. During sleep, our body repairs its wear and tear.

5. Some causes of unhealthy surroundings are as follows:

(a) Throwing of polythene and plastic bags in drains and open areas.

(b) Spitting on roads and public places.

(c) Throwing garbage in open places.

6. *Swachh Bharat Abhiyan* is a national campaign to make India a clean country. Prime Minister Shri Narendra Modi launched it.

E. 1. Personal cleanliness

2. Junk food

3. Jute bags

THINK ZONE

1. Cleanliness keeps our body healthy. If our body is healthy, we can do hard work and make progress in life. Also, with good health we can enjoy the life. This makes us happy.
2. We should cover our mouth and nose while sneezing to prevent spreading of germs into the air.