

Chapter 1: Natural Resources –Air, Water & Land

EXERCISE [PAGE 8]

Exercise | Q 1.1 | Page 8

Fill in the blank

The layer of ozone gas absorbs rays that come from the sun to the earth.

SOLUTION

The layer of ozone gas absorbs UV rays that come from the sun to the earth.

Exercise | Q 1.2 | Page 8

Fill in the blank

Of the total water available on the earth, fresh water forms percent.

SOLUTION

Of the total water available on the earth, fresh water forms 0.3 percent.

Exercise | Q 1.3 | Page 8

Fill in the blank

Both _____ and _____ constituents are present in the soil.

SOLUTION

Both biotic and abiotic constituents are present in the soil.

Exercise | Q 2.1 | Page 8

Why is it said that – The ozone layer is a protective shell of the earth?

SOLUTION

The ozone layer acts as a protective layer for life on the earth because it absorbs harmful ultraviolet radiation of the sun. These radiations, if reach the Earth's surface, can cause skin cancer.

Exercise | Q 2.2 | Page 8

Why is it said that – Water is life?

SOLUTION

Water is one of the most precious resources which we have on earth. All the biochemical processes which occur in plants and animals, our surroundings, etc. require water to function. It is required for the existence of life on earth as it is an essential component of all the biological processes. We cannot imagine our lives without the presence of water.

Exercise | Q 2.3 | Page 8

Why is it said that – Seawater is useful even though it is not potable?

SOLUTION

Although seawater is not potable, it has various other kinds of uses which prove its importance:

- Water from oceans can be used for making hydroelectricity, a form of renewable source of energy.
- It can be used as a cheap transport method.
- They can be used for activities like scuba diving, water sports, etc. which is a means of boosting the tourism and economic growth of a country.
- Nuclear power plants require coolants like water to bring down the temperature of the reactors. For this purpose, several gallons of water are required and this demand is fulfilled by the water from oceans.
- They support a variety of flora and fauna which have both ecological and economical value.

Exercise | Q 3.1 | Page 8

What will happen if – Microbes in the soil get destroyed?

SOLUTION

Soil contains various kinds of microbes like bacteria, fungi, algae, protozoa, etc. All of these microorganisms play important roles like:

- Certain bacteria and blue-green algae have the ability to fix atmospheric nitrogen. This, in turn, enriches the fertility of the soil. Such microorganisms are known as biological nitrogen-fixers. Example – Rhizobium is a symbiotic bacterium that lives in the root nodules of leguminous plants. Rhizobium fixes atmospheric nitrogen into nitrogenous compounds.
- The bacteria and fungi present in soil decompose dead organic wastes of plants and animals and convert them into manure. The manure contributes to the humus content of the soil, thereby helping in increasing its fertility.
- Not only these, microorganisms that are found in soil are also a part of many biogeochemical cycles that would not take place in their absence.

The above points explain the fact that how important microbes are and if they are destroyed its effect can be irreversible.

Exercise | Q 3.2 | Page 8

What will happen if – The number of vehicles and factories in your surroundings increases?

SOLUTION

Vehicles and factories are the major sources of air pollution. If the number of vehicles and factories increase in our surroundings, it is obvious that it would result in increased levels of air pollution. Not only air pollution but they also result in noise pollution. In case, the no. of industries increase in our surrounding it means, more trees would have to be cut down to make way for them and thus resulting in damage to the environment.

Exercise | Q 3.3 | Page 8

What will happen if – The total supply of potable water is finished?

SOLUTION

If the total supply of potable water is finished then the life on earth will end. Water is required for the existence of living beings and in its absence, it would hamper their development process and their survival.

Exercise | Q 4 | Page 8

Match the following

Group 'A'	Group 'B'
(1) Carbon dioxide	(a) Generation of soil
(2) Oxygen	(b) Rain
(3) Water vapour	(c) Plants and food production
(4) Microbes	(d) Combustion

SOLUTION

Group 'A'	Group 'B'
(1) Carbon dioxide	(c) Plants and food production
(2) Oxygen	(d) Combustion
(3) Water vapour	(b) Rain
(4) Microbes	(a) Generation of soil

Exercise | Q 5.1 | Page 8

Name the following.
Constituents of the biosphere

SOLUTION

Constituents of the biosphere- hydrosphere and atmosphere

Exercise | Q 5.2 | Page 8

Name the following.
Biotic constituents of soil

SOLUTION

Biotic constituents of soil- microorganisms and insects

Exercise | Q 5.3 | Page 8

Name the following.
Fossil fuel

SOLUTION

Fossil fuel- coal and petroleum

Exercise | Q 5.4 | Page 8

Name the following.
Inert gases in the air

SOLUTION

Inert gases in the air:

1. Helium
2. Neon
3. Argon
4. Radon
5. Xenon
6. Krypton

Exercise | Q 5.5 | Page 8

Name the following.
Gases that are harmful to the ozone layer

SOLUTION

Gases that are harmful to the ozone layer- carbon tetrachloride

Exercise | Q 6.1 | Page 8

True or false?

Land and soil are the same things.

1. True
2. False

SOLUTION

Land and soil are the same thing.- **False**

Exercise | Q 6.2 | Page 8

True or false?

The water in a lake is called ground water.

1. True
2. False

SOLUTION

The water in a lake is called ground water.- **False**

Exercise | Q 6.3 | Page 8

True or false?

It takes about 1000 years to form a 25 cm thick layer of soil.

1. True
2. False

SOLUTION

It takes about 1000 years to form a 25 cm thick layer of soil.-**False**

Exercise | Q 6.4 | Page 8

True or false?

Radon is used in decorative lights.

1. True
2. False

SOLUTION

Radon is used in decorative lights.- **False**

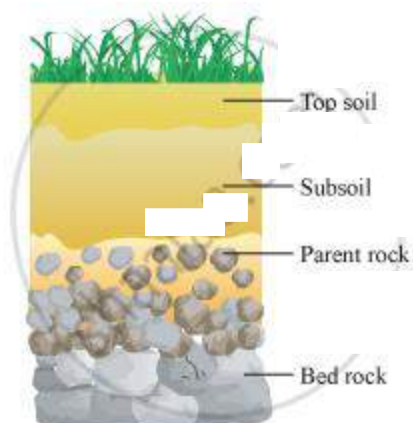
Exercise | Q 7.1 | Page 8

Answer in your own words.

Explain with the help of a diagram of how soil is formed.

SOLUTION

Soil is formed by the process of weathering during which rocks break down to form soil particles. This breaking down of rock occurs over a period of millions of years. Weathering can be physical, chemical, and biological. The bedrock breaks down into pieces due to the effects of heat, cold, water, wind, and rain. Microbes, insects, and rodents also help in this process. The roots of trees also help in the process of weathering.



Exercise | Q 7.2 | Page 8

Answer in your own words.

Why is there a shortage of water even though it occupies about 71% of the earth's surface?

SOLUTION

Although water occupies about 71% of the earth's surface, all of it is not potable water. Most of the water is available in the form of seas and oceans which is salty in nature. This saline water has its limitations and cannot be used for many purposes. Around 2.7% of water exists in the frozen state or as groundwater which is inaccessible. Only 0.3% of water is available as potable water which is fit for human consumption.

Exercise | Q 7.3 | Page 8

Answer in your own words.

What are the various constituents of air? Write their uses.

SOLUTION

Constituents of air	Uses
1. Nitrogen	Required in building proteins. Useful in the production of ammonia. Used in airtight packaging of food products.
2. Oxygen	Necessary for respiration and combustion.
3. Carbon dioxide	Used by plants to make their foods. Used in fire extinguishers.

4. Argon	Used in electric bulbs.
5. Helium	Used for obtaining low temperatures. Used for generating lifts in airships.
6. Neon	Used in decorative lights and street lighting.
7. Krypton	Used in fluorescent tubes.
8. Xenon	Used in flash photography.

Exercise | Q 7.4 | Page 8

Answer in your own words.

Why are air, water, and land considered to be valuable natural resources?

SOLUTION

The following points elucidate the fact that air, land, and water are valuable natural resources:

Importance of air:

- The importance of air can be understood by the fact that earth supports life because of the presence of this air in our surroundings.
- It is required for various biological functions and biogeochemical cycles.

Importance of land:

- All terrestrial organisms live on land.
- We use it for the purpose of land farming, building houses, roads, etc.
- The plants and animals which we use also grow on the land.
- The minerals which we obtain from deep inside the earth are also important resources. For example, petrol, coal, etc.

Importance of water:

- Water plays an important role in various vital processes that are carried out by our bodies. All cellular processes take place in a water medium.
- The availability of water plays an important role in deciding the number of individuals of each species that will be able to survive in a particular area, and also the sustainability of life in the region.
- Fresh water is utilized by humans for consumption.
- Water is central to the lives of aquatic animals that live in water.