



## SSC Board: Std 6

### Ch 1 Natural Resources – Air, Water and Land - question and answers

#### 1. What are the five layers of the atmosphere?

The five layers of the atmosphere are troposphere, stratosphere, mesosphere, ionosphere and exosphere.

#### 2. What would have happened if there were no air on the earth?

The living world on the earth is sustained due to the balance between various gases and other constituents of air. Moreover, the atmosphere is a very important filter. It allows the light and heat of the sun to reach the earth, which is necessary for life. But it prevents the harmful elements from reaching the earth. If there is no air on the earth then all living organisms will not survive and there will be vast s=destruction on the earth.

#### 3. In what ways is the water in seas and oceans useful even though it is salty?

Seawater is salty, so it is not potable, yet it is very useful as it helps in the process of water cycle. The sea water evaporates and turns into water vapour, which rises up and forms clouds. The water vapour in the clouds then condenses and comes down in the form of rain.

#### 4. Do other living things use water like we do?

No, though all living things require water, they do not use water like we do.

#### 5. What is land made of?

Land is made up of stones, soil and big rocks.

#### 6. Is land flat everywhere?

Land is not flat everywhere. It is hilly in some places and flat in others.

#### 7. What do you see on land?

We see the biotic and abiotic things on land.

#### 8. Does man produce soil/land?

No man does not produce soil or land, it is a natural resource.

#### 9. What has man created on land?

Man has constructed houses and roads on land. Man has also used land for farming.

#### 10. If a deep pit is dug in the ground, what do you find there?

If a deep pit is dug in the ground we see the different layers of soil.

#### 11. What are the constituents of soil? Classify them as biotic and abiotic constituents.

The biotic and abiotic components are the constituents of soil.

Biotic components include all the microorganisms and

Abiotic components include clay, sand, rocks, minerals, remains of dead plants and animals

## Exercise

### 1. Fill in the blanks.

(a) The layer of ozone gas absorbs **ultra violet** rays that come from the sun to the earth.

(b) Of the total water available on the earth, fresh water forms **0.3** percent.

(c) Both **biotic** and **abiotic** constituents are present in the soil.

## 2. Why is it said that – ?

### (a) The ozone layer is a protective shell of the earth.

The ultra violet rays coming from the sun are very harmful for living things. The ozone gas absorbs these rays. As a result, life on earth is protected. Therefore the ozone layer is the protective shell of the earth.

### (b) Water is life.

The blood of animals and the sap in plants contain a very high proportion of water. No living thing can survive without water. Therefore, it is said that Water is life.

### (c) Seawater is useful even though it is not potable.

Seawater is salty, so it is not potable, yet it is very useful as it helps in the process of water cycle. The sea water evaporates and turns into water vapour, which rises up and forms clouds. The water vapour in the clouds then condenses and comes down in the form of rain.

## 3. What will happen if –

### (a) Microbes in the soil get destroyed.

Humus is the layer formed on soil due to the decomposition of dead plants and animals by microbes. Humus supplies nutrients to the soil. If microbes in the soil get destroyed then the process of decomposition of dead plants and animals will stop and thus the soil will not get the nutrients. No new plants will grow and this will break the food-chain which will lead to the death of all living things. There will be no life on earth.

### (b) The number of vehicles and factories in your surroundings increases.

The air in the atmosphere around the earth contains nitrogen, oxygen, carbon dioxide, six inert gases, nitrogen dioxide, sulphur dioxide, water vapour and dust particles. The living world on the earth is sustained due to the balance between various gases and other constituents of air. If the number of vehicles and factories in our surroundings increases then there will be large scale emission of smoke. This smoke directly mixes with the atmosphere, disturbing the balance between the constituents of air. And life on earth will be harmed.

### (c) The total supply of potable water is finished.

The blood of animals and the sap in plants contain a very high proportion of water. If the total supply of potable water is finished then no living thing can survive on earth.

## 4. Match the following.

### Group 'A'

- (1) Carbon dioxide
- (2) Oxygen
- (3) Water vapour
- (4) Microbes

### Group 'B'

- (a) Generation of soil
- (b) Rain
- (c) Plants and food production
- (d) Combustion

1 – c, 2 – d, 3 - b, 4 - a

## 5. Name the following.

(a) **Constituents of the biosphere:** The biotic and abiotic components present in the atmosphere, hydrosphere and lithosphere form the constituents of the soil.

(b) **Biotic constituents of soil:** microbes, worms, insects, rodents like rats and mice

(c) **Fossil fuel:** crude oil

(d) **Inert gases in air:** argon, helium, neon, krypton and xenon

(e) **Gases that are harmful to the ozone layer:** carbon tetrachloride or the chlorofluorocarbons.

## 6. True or false?

(a) Land and soil are the same thing. **False**

(b) The water in a lake is called ground water. **True**

- (c) It takes about 1000 years to form a 25 cm thick layer of soil. **False**  
(d) Radon is used in decorative lights. **False**

### 7. Answer in your own words.

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

Due to the heat, cold and water of the sun, wind and rain respectively, the bedrock breaks down into pieces. Stones, sand and soil are formed from these pieces. Microbes, worms and insects are found among them. Rodents like mice and rats are also found here. These help in the weathering of the rocks. The roots of trees growing on the land also help weathering of rocks. The process of soil formation is slow and continuous. It takes about a thousand years for a 2.5 cm thick layer of mature soil to form.

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

Though 71% of the earth is occupied by water, only 0.3% is potable. Due to the uncontrolled use of water for an increasing population, industry and farming, it is now in short supply.

#### (c) What are the various constituents of air? Write their uses.

The air in the atmosphere around the earth contains nitrogen, oxygen, carbon dioxide, six inert gases, nitrogen dioxide, sulphur dioxide, water vapour and dust particles.

##### Some uses of gases in air:

Nitrogen – Helps living things to build the necessary proteins. It is useful in the production of ammonia and in airtight packaging of foodstuffs.

Oxygen – Necessary for respiration in living things and for combustion.

Carbon dioxide – Plants use it for producing their food. Used in fire extinguishers.

Argon – Used in electric bulbs.

Helium – Used for obtaining low temperature and also for generating lift in airships.

Neon – Used in decorative lights and for street lighting.

Krypton – Used in fluorescent tubes.

Xenon – Used in flash photography.

#### (d) Why are air, water and land considered to be valuable natural resources?

Air, water and land are the factors important for sustaining the living world on the earth and for fulfilling their basic needs. Therefore, they are considered to be natural resources.

### Fill in the blanks.

1. Air, water and land are called the earth's atmosphere, hydrosphere and lithosphere, respectively.
2. These living things and the parts of the lithosphere, hydrosphere and atmosphere which they occupy are together called the biosphere.
3. The atmosphere is the layer of air that surrounds the earth.
4. The surface of the earth comprises water and land, that is, the hydrosphere and lithosphere.
5. The troposphere contains about 80% of the total mass of gases in the air, while this proportion is about 19% in the stratosphere.
6. In the mesosphere and ionosphere, the proportion of the mass of gases goes on decreasing.
7. Gases are not found in the exosphere and beyond.
8. The amount of the gases in the air is the greatest near the surface and decreases as we go higher and higher from the surface.
9. Air becomes rarer at higher altitudes.
10. Nitrogen helps living things to build the necessary proteins.
11. Nitrogen is useful in the production of ammonia and in airtight packaging of foodstuffs.
12. Oxygen necessary for respiration in living things and for combustion.
13. Oxygen necessary for combustion.
14. Plants use carbon dioxide for producing their food.
15. Carbon dioxide is used in fire extinguishers.
16. Argon used in electric bulbs.
17. Helium used for obtaining low temperature and also for generating lift in airships.
18. Neon used in decorative lights and for street lighting.
19. Krypton used in fluorescent tubes.

20. Xenon used in flash photography.
21. It is in the atmosphere that fog, clouds, snow and rain are produced.
22. There is a layer of ozone gas in the lower part of stratosphere.
23. The ozone gas absorbs the ultra violet rays.
24. The ozone layer is destroyed if chemical gases like carbon tetrachloride or the chlorofluorocarbons used in air conditioners and refrigerators mix with the air.
25. 16th of September is celebrated as 'Ozone Protection Day' all over the world to make everyone aware of the importance of ozone.
26. We need to drink three to four litres of water every day so that all our bodily functions run smoothly.
27. If hydrogen gas burns in air, it combines with oxygen and water is formed.
28. In nature, water occurs in three states, solid, liquid and gaseous.
29. Water does not have colour, taste or odour.
30. Many substances readily dissolve in water. Therefore, water is a universal solvent.
31. The water vapour formed from oceans is the main source of water in the water cycle.
32. All terrestrial animals including man live on land.
33. The abiotic components of soil are supplied through the weathering of the bedrock.
34. It takes about a thousand years for a 2.5 cm thick layer of mature soil to form.
35. Erosion of land is reduced if grass, trees and bushes are grown in it.
36. Humus is the layer formed on soil due to the decomposition of dead plants and animals by microbes.
37. Humus supplies nutrients to the soil.
38. Humus is also important for aerating the soil and for holding water in the soil.
39. The proportion of humus in the upper layer of good fertile soil is about 33% to 50%.
40. We get fuels like petrol, diesel, kerosene, paraffin and other useful materials like tar and wax from the fossil fuel called crude oil.
41. The elements available in nature which fulfil the basic needs of living things are called natural resources.
42. Air, water and land are important natural resources.
43. The ozone layer is a protective shell of the earth.
44. Natural resources should be used carefully and sparingly.

## Answer the following questions

### 1. What are natural resources?

Air, water and land are the factors important for sustaining the living world on the earth and for fulfilling their basic needs. They are called natural resources.

### 2. Name the three spheres of the earth.

Lithosphere, hydrosphere and atmosphere are the three spheres of the earth.

### 3. What is the proportion of land and water on the earth?

Land occupies 29% and water occupies 71% of the earth.

### 4. Name the components of atmosphere and their proportion. The air in the atmosphere consists of:

Nitrogen	78%
Oxygen	21%
Carbon dioxide	0.03%
Six inert gases	0.97%
nitrogen dioxide	
sulphur dioxide	
water vapour and dust particles.	

### **5. Why is atmosphere very important?**

The atmosphere is a mixture of many gases. The living world on the earth is sustained due to the balance between various gases and other constituents of air. The atmosphere is a very important filter. It allows the light and heat of the sun to reach the earth, which is necessary for life. But it prevents the harmful elements from reaching the earth. It is in the atmosphere that fog, clouds, snow and rain are produced.

### **6. What is air pollution?**

There is a large scale emission of smoke by industries vehicles and burning of wood and coal. This smoke directly mixes with the atmosphere, disturbing the balance between the constituents of air. This is called air pollution.

### **7. How is air pollution increasing?**

Harmful gases are given out through combustion of fuels in vehicles and in big industries and also through incomplete combustion of fuels like wood and coal. As a result, air pollution is increasing day by day.

### **8. Write a note on ozone layer.**

There is a layer of ozone (O<sub>3</sub>) gas in the lower part of stratosphere. Ozone gas is not directly useful for the survival of living things, yet it is very important for living things to have this layer of ozone at a high altitude around the earth. The ultra violet rays coming from the sun are very harmful for living things. The ozone gas absorbs these rays. As a result, life on earth is protected. The ozone layer is destroyed if chemical gases like carbon tetrachloride or the chlorofluorocarbons used in air conditioners and refrigerators mix with the air.

### **9. Why is ozone layer called the protective shell?**

The ultra violet rays coming from the sun are very harmful for living things. The ozone gas absorbs these rays. As a result, life on earth is protected. Therefore, ozone layer is called the protective shell.

### **10. When is World Ozone day and why is it celebrated?**

The 16th of September is celebrated as 'Ozone Protection Day' all over the world to make everyone aware of the importance of ozone.

### **11. Why are large pollution boards displayed in metropolitan cities?**

In metropolitan cities like boards are displayed at places of heavy traffic to show the proportions of the various constituents of the air at that place. Due to these boards, we can see the amount of harmful elements in the air.

### **12. Write the properties of water.**

In nature, water occurs in three states solid, liquid and gaseous state.

Water does not have colour.

Water is tasteless.

Water is odourless.

Many substances readily dissolve in water. Therefore, water is a universal solvent.

### **13. Why is it said that water is life?**

The blood of animals and the sap in plants contain a very high proportion of water. No living thing can survive without water. Therefore, it is said that 'Water is life.'

### **14. How do we get rain?**

The water vapour formed from oceans is the main source of water in the water cycle. It gets converted into rain, creating fresh water sources on earth.

### **15. Name the different ways of conserving water.**

1. Use water sparingly.
2. Block water, let it percolate.

3 Store water wherever possible.

4. Reuse water wherever possible.

Remember, stored water does not become stale at once.

**16. How is land an important resource?**

All terrestrial animals including man live on land. Some terrestrials dig burrows in the ground for shelter. We also use land for farming and for building houses and roads. We make use of plants and animals in the forests that grow on land. The minerals, crude oil and natural gas obtained from the earth (land) are very important for us. Therefore, land is an important resource.

**17. Name the layers of soil formed under the earth.**

The layers of soil are humus, soil, immature soil, layer of soil and small rocks and bedrock.

**18. What is the best remedy for conserving and preventing soil erosion?**

The best remedy for conserving and preventing soil erosion is to increase the green cover of the land. Erosion of land is reduced if grass, trees and bushes are grown in it.

**19. Write a short note on humus.**

Humus is the layer formed on soil due to the decomposition of dead plants and animals by microbes. Humus supplies nutrients to the soil. Humus is also important for aerating the soil and for holding water in the soil. The proportion of humus in the upper layer of good fertile soil is about 33% to 50%.

**20. Write a short note on fossil fuel.**

Forests on land got buried underground due to the great upheavals that took place on the earth many ages ago. After that, the process of formation of fossil fuels from the remains of living things took place underground. We get fuels like petrol, diesel, kerosene, paraffin and other useful materials like tar and wax from the fossil fuel called crude oil.

**21. Write a short note on India Meteorological Department (IMD)**

India Meteorological Department (IMD) was established in 1875 for studying the weather in the Indian subcontinent. The main function of this institute is to observe the weather and to make weather forecasts. This institute also conducts research related to changes in weather, makes forecasts about rains and studies the developments related to global warming.