

# Our Environment

## Solution 1:

All the things in our surroundings which are related to our life together constitute the environment. The environment consists of two components – biotic and abiotic. Biotic components consist of all living organisms such as plants, animals, insects and microorganisms. Abiotic components are non-living things such as sunlight, water, soil, air etc.

## Solution 2:

1. The living elements of the environment are called the **biotic** factors.
2. The non-living factors of the environment are also called the **abiotic** factors.

## Solution 3:

In the given food chain, if the frogs which live on insects were destroyed, the number of insects would increase drastically. This increased insect population will feed on plants and reduce the number of plants (crops). Because frogs form the food for snakes, the snakes would starve and their population would get reduced. In the absence of snakes, the kites would not get food and their number would also reduce drastically. Thus, if any one element of the environment is disturbed or damaged, it has an effect on the other elements, and the balance of the environment as a whole gets disturbed.

## Solution 4.a:

Microorganisms in the soil carry out the decomposition of vegetable refuse, plant waste, excreta of animals, remains of living organisms etc. This process of decomposition converts the waste matter into useful manure.

## Solution 4.b:

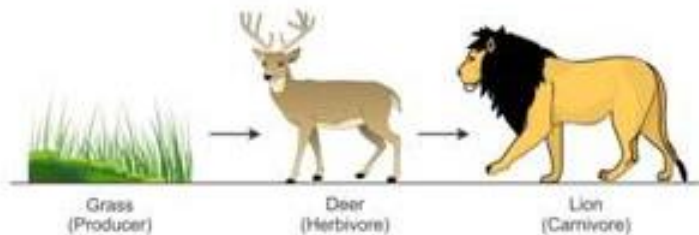
1. Every living thing gets its food from the environment. Many animals eat plants which grow by absorbing water and nutrients from the soil.
2. Every living thing gets oxygen from the air.
3. Plants use carbon dioxide given out by living things during respiration to make food.
4. The environment provides shelter to the animals and plants.
5. Microorganisms in the soil decompose the dead and decaying matter of animals and plants and help to replenish minerals and other nutrients in the soil.

#### Solution 4.c:

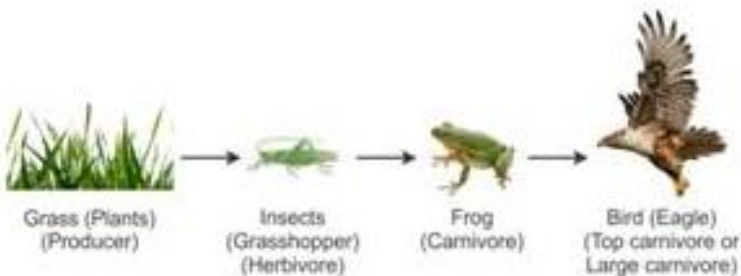
1. The growth of plants using substances in the soil and the continuous addition of nutritive substances to the soil due to decomposition of the remains of plants constitute an important cycle in nature.
2. Living things use oxygen from the atmosphere for respiration. The carbon dioxide they exhale is used by plants to make their food. The plants again release oxygen into the atmosphere.
3. In this way, several cycles operate simultaneously in nature. If any one of them is disturbed, it has an adverse effect on the environment.
4. Besides, it takes very long to restore the smooth running of the disturbed cycle. Therefore, it is necessary to be alert and prevent any damage to the environment.

#### Solution 5:

1. In the given food chain, grass is the producer which uses energy from the Sun to prepare food. Grass is eaten by the deer which is a herbivore. Deer is eaten by the lion which is a carnivore.



2. In the given food chain, grass is eaten by insects like grasshopper. The grasshopper is eaten by the frog, and the frog is eaten by birds like the eagle. So, grass is a producer; grasshopper eats grass, so it is a herbivore. The frog eats insects; hence, it is a carnivore. The eagle eats frog; hence, it is a top carnivore.



#### **Solution 6.a:**

Forests, scrub and vegetation provide food and shelter to many animals and birds. If such areas decrease, the animals and birds will not get enough space to hide and get proper shelter. This will reduce their number. Other bigger animals dependent on birds for food will also suffer if their prey are reduced in number and will ultimately die due to starvation. Therefore, the entire balance of such a forest will be disturbed if forests, scrub and other vegetation are reduced.

#### **Solution 6.b:**

If sewage carrying dangerous chemicals enters rivers, it will adversely affect all living organisms in the rivers. Many poisonous substances which enter the rivers through the sewage may get accumulated in the bodies of living organisms and fish. If such fish is consumed by people, it will even harm their health. If such contaminated water seeps into the soil, it will make the soil infertile and destroy useful microorganisms present in the soil.

#### **Solution 6.c:**

Insecticides are non-biodegradable poisonous substances and are passed along the food chain. They have a tendency to get accumulated in the bodies of insects. If birds eat the insects which have been killed by insecticides, the chemicals get accumulated in the body of birds and may kill them or affect their eggs. If such birds are consumed by larger animals, the insecticides even enter their bodies and may kill them.

#### **Solution 6.d:**

If poisonous substances are overused to prevent insects from destroying a crop, they will accumulate in the soil and make it infertile. These harmful substances will get accumulated in plant bodies and pass along the food chain from crops to man or other animals and birds and harm them.

#### **Solution 6.e:**

If a dam is built in a famine-prone region, the water can be used for irrigation, and hence, agriculture will flourish. Also, the water can be supplied through canals and used for drinking. This will check famine and drought. However, if a very big dam is built, it will cause a lot of damage to the environment because a large area gets submerged under water. This results in deforestation and loss of biodiversity because a large variety of plants and animals get submerged in dam water and may disturb the ecological balance. People living along the river are also displaced and their lives are affected.