

Std X
Science 2
Chapter 4: Environmental Management

Q1. Reorganize the following food chain. Describe the ecosystem to which it belongs.

Grasshopper – Snake – Paddy field – Eagle – Frog.

Ans: The reorganized food chain is as follows:

Paddy field → Grasshopper → Frog → Snake → Eagle.

1. Paddy is cultivated on a large scale in various South Indian states.
2. In this food chain of the ecosystem, grasshopper, is the primary consumer attacking the paddy fields, which are the primary producers.
3. Similarly, frogs are the secondary consumers, also present in large numbers in the mud of paddy fields, to feed upon grasshoppers.
4. Meanwhile, snakes, the tertiary consumer are also present, and they feed upon their favorite food- the secondary consumer i.e. frogs.
5. Finally, we have Eagles at the top most position in this food chain, and they feed on carnivores like the snake.

Q2. Explain the statement- ‘we have got this Earth planet on lease from our future generations and not as an ancestral property from our ancestors.’

Ans: 1. Existence of man is entirely dependent on the existence of ecosystem.
2. Man drives his benefits by using various components of the ecosystem.
3. We can get the materials easily from the nature as our ancestors protected and conserved them for us.
4. Today man is indiscriminately using the natural resources for personal greed.
5. It is our responsibility to preserve, conserve and protect nature so that next generations will get conducive climate and their life may not be in trouble.
6. Thus, it is rightly said that, we got the planet Earth on lease from our future generations and not as an ancestral property.

Q3. Write short notes on:

a) Environmental Conservation.

1. All the developed, developing and underdeveloped countries have accepted the responsibility of environmental protection.
2. Values like positive attitude and affection towards environment, knowledge about it, etc. should be inculcated among the children since their childhood.
3. Environmental conservation is our social responsibility.
4. Various laws are enacted about environmental conservation. Humans have a crucial role in environmental conservation.

5. These laws are to be implemented strictly and whoever is a culprit, should be severely punished.

b) Chipko movement of Bishnoi.

1. In the 1970s, an opposition to the destruction of forests spread throughout India and came to be known as the Chipko movement.
2. The name of the movement comes from the word “stick” or “embrace” as the villagers hugged the trees and prevented the contractors from cutting them.
3. The original Chipko movement was started by the Bishnoi community around 260 years ago in Rajasthan.
4. A large group of villagers led by Amrita Devi laid down their lives in an effort to protect the trees from being cut down on the orders of the Maharaja of Jodhpur.
5. After this incident, the Maharaja gave a strong royal decree preventing the cutting of trees in the Bishnoi villages.
6. The success achieved by this protest led to similar protests in other parts of the country.

c) Biodiversity.

1. Biodiversity is the richness of living organisms in nature due to presence of varieties of organisms, ecosystems and genetic variations within a species. Biodiversity occurs at three different levels.
2. Genetic Diversity - Occurrence of diversity among the organisms of same species is genetic diversity. For example, each human being is different from other.
3. Species Diversity - Innumerable species of organisms occur in the nature. This is called as species diversity. Species diversity includes various types of plants, animals and microbes.
4. Ecosystem Diversity - Many ecosystems are present in each region. Ecosystem is formed through the interaction between plants, animals, their habitat and changes in the environment. Each ecosystem has its own characteristic animals, plants, microbes and abiotic factors. Ecosystems are also of two types are natural and artificial.

d) Sacred groves.

1. The forest conserved in the name of God and considered to be sacred is called as sacred grove.
2. These are in fact ‘sanctuaries’ conserved by the society and not by the government forest department.
3. As it has been conserved in the name of God, it has special protection.
4. These clusters of thick forests are present not only in Western Ghats of India but in the entire country.

5. More than 13000 sacred groves have been reported in India.

e) Disaster and its management.

1. Various dangerous events occur many times in the environment. These are called as disasters.
2. Disaster is a sudden event that leads to huge loss of life and property.
3. Disaster management is either prevention of disasters or making arrangements to face them.
4. In case of disaster management, there should be an attempt to minimize the losses.
5. Disasters are never planned but losses due to them can be prevented in a planned manner.
6. Disaster management is achieving or improving the ability to face the disaster through scientific and careful observations and analysis of data.
7. For example, preparing the action plan through study of various aspects like preventive measures, rehabilitation and reconstruction and executing that plan is management of disaster.
8. Increasing awareness about disaster management among the general public through training programs, mass media, etc. will enable them to be always prepared for disaster rescue.

Q4. How will you justify that overcoming the pollution is a powerful way of environmental management?

1. When some natural factors of environment and some artificial polluted factors harm the environment, it creates imbalance between various factors of the environment it and ultimately affects the existence of biotic factors.
2. The main threat to the ecosystem is the pollution of materials present in it. Sometimes it may damage the ecosystem completely in the course of time.
3. In environment management, we take the task of protecting, conserving and preserving the natural components of the ecosystem.
4. If we control the pollution, then the environmental management activities will get full success and the purpose will be served.
5. If there is minimum pollution, then the nature cycles will continue without any disturbance and the biodiversity can be enriched.

**Q5. Which projects will you run in relation to environmental conservation?
How?**

9. Project 1: Tree plantation and cultivation: This program is necessary as only if people come to know the importance of a tree, plantations will increase and cutting trees will be reduced.
10. Project 2: Save water: In this project, people and students will be made aware of the importance of water. At the same time, various methods of water conservation will be taught.
11. Project 3: Wildlife conservation: Various places like sanctuaries, national parks can be visited to know more about the wild animals and we can make efforts to protect them.
12. Project 4: Minimize or avoid use of plastic: With this activity, we can create awareness about the hazards (harmful effects) of plastic and various programs can be conducted to create awareness about minimizing the use of plastic and conserving the environment.

Q6. Answer the following:

a) Write the factors affecting environment.

1. Environment is affected by natural factors and artificial factors.
2. Natural factors: earthquakes, floods, fires, droughts, etc.
3. Artificial factors: deforestation, industrialization, use of excessive pesticides and fertilizers, unorganized garbage disposal, etc.
4. These factors cause pollution, create imbalance and ultimately affect the existence of biotic factors.

b) Why do human beings have an important place in the environment?

1. Since existence of humans, there is interrelationship between human and environment.
2. Humans stepped on the Earth long after formation of Earth.
3. On the Earth, human being proved its superiority as compared to other animals with the help of characters like intelligence, memory, imaginary ability, etc.
4. Human beings established domination over the nature and they utilized all the natural resources as much as possible.
5. In an attempt to live a satisfactory life, human beings kept on snatching from the nature as much as possible and this led to increase in problems.
6. From this entire scenario, we can understand that humans have a crucial role in maintaining the environmental balance.
7. If humans have disturbed the environmental balance, then humans only can conserve and improve the quality of nature.

c) Write the types and examples of biodiversity.

Answer to this question is the same as the answer of Q3 (c) i.e. write short notes on biodiversity.

d) How can the biodiversity be conserved?

Ans. Biodiversity can be conserved by the following ways:

1. Protecting the rare species of organisms.
2. Establishing national parks and sanctuaries.
3. Declaring some regions as 'bioreserves'.
4. Projects for conservation of special species.
5. Conserving all plants and animals.
6. Observing the rules.
7. Maintaining record of traditional knowledge.

e) What do we learn from the story of Jadav Molai Peyang?

Ans. We can learn from the story of Jadav Molai Peyang that positive attitude towards the environment, hard work with patience and a single person with determination can establish a new forest.

f) Write the names of biodiversity hotspots.

Ans. The names of biodiversity hotspots are as follows:

1. Western Ghats spread over the states of Gujarat, Maharashtra, Goa, Tamilnadu and Kerala.
2. Manas Sanctuary of Assam.
3. Sunderban Sanctuary of West Bengal.

g) Which are the reasons for endangering the many species of plants and animals? How can we save those?

Ans. Numerous species of animals and plants have become endangered due to activities of human beings.

1. Animals and plants are the sources of income for some people. Hence, poaching takes place which becomes a big threat to the existence of animals and plant life.
2. Animal skin, flesh and bones are used for various purposes and thus they are killed.
3. Wood, medicinal plants, gum, resins, etc. are the plant products which are useful and hence, plants are cut.
4. Animals and plants have demand abroad for research and medicines and due to this hunting takes place, which results in making certain varieties endangered.
5. Because of all these reasons certain animals and plants become endangered.

6. We can save the remaining animal and plant life by ways of environmental education, awareness programs, strict rules and regulations, implementing various environmental acts and prohibiting poaching to prevent the loss of animals and plants.

Q7. What are the meanings of following symbols? Write your role accordingly?



Symbol 1 represents recycle. This sign is seen on various packaged food materials. Recycling is one of the methods to conserve our environment, for example recycling of paper saves several others trees from being cut down. Therefore, recycling of paper will not only prevent deforestation but also prevent water pollution.



Symbol 2 represents water conservation. Water can be conserved by various methods. The most effective means of conserving water is rainwater harvesting, which involves collecting rainwater and storing it for further use. Water can also be conserved by checking our day-to-day habits and ensuring that there is no wastage of water. Innovative irrigation techniques such as drip irrigation also help in water conservation to a great extent.



Symbol 3 represents solar panels. Solar energy can be harnessed with the help of solar cells. Solar panels devices are used to convert thermal energy of sun into electric energy. We can save energy by using solar energy.

Note: Please read the textbook and study the notes given so you will be able to answer MCQ type questions and Objective type questions in the exam. Learn the flow charts and concept/mind maps given in the textbook along with all the Do you know boxes and Use your brain power questions.