

Chapter 4 Environmental management

Question 1.

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

Grasshopper – Snake – Paddy field – Eagle – Frog.

Answer:

Paddy field – Grasshopper – Frog – Snake – Eagle

Paddy field represents the primary producer which are plants.

Grasshopper is a primary consumer. Primary consumers are organisms that eat the primary producers and are usually herbivores.

Frog is a secondary consumer. Secondary consumers are organisms that eat the primary consumers and are generally meat-eaters/carnivores.

Snake is a tertiary consumer. Tertiary consumers are organisms that eat the secondary consumers. These organisms are carnivore-eating carnivores, like snakes or big fish.

Eagle is a quaternary consumer and in this case it is the apex consumer because it occupies the highest position in the food chain.

Question 2.

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

Answer:

- The earth was inhabited by older generations before us. We have replaced them.
- We have created hazardous impact on the earth. The industrialization, the construction activities such as dams, roads and bridges, extensive deforestation, etc
- All these activities were for development of mankind. But most of them have destroyed the delicate balance between the producers and different levels of consumers.
- Due to ever increasing population of human beings there is shortage of food, clothing and shelter. To procure these basic needs, we have exploited many natural resources.
- Now it is our turn to protect the earth as on the same planet the next generations have to survive.

Question 3.

Write short notes.

a. Environmental conservation.

Answer:

Due to natural and man-made causes, there are many environmental problems on the earth. These problems affect the existence of various living organisms. In order to save these organisms and maintain the environmental balance, there is need for environmental conservation. If this is not done then there will not be any quality of life for the resident humans. For environmental conservation, the Government has formulated acts and rules.

The people's participation in the conservation movement is essential. Conservation of environment is the social responsibility of everyone.

b. Chipko Movement of Bishnoi.

Answer:

The Chipko Movement started in the 1970s in Garhwal in Uttarakhand. It was a socio-ecological movement which followed the Gandhian ideology of satyagraha for the protection of trees from cutting. Chipko, in Hindi, literally means 'to stick'. Under the movement, people used to hug the trees in order to protect them from being felled. The movement mobilized villagers by making them aware about the after effects of destruction of forests. It was a great success and soon spread all over India. It was because of Chipko Movement that the government of India realized the importance of formulating wildlife conservation plans and policies in order to protect the biodiversity of the country.

c. Biodiversity.

Answer:

Biodiversity refers to the combined diversity at all levels of biological organisation. It includes genetic diversity, species diversity and ecological diversity. Importance of biodiversity:

- (i) A wide range of materials such as fibres, dyes, resins are obtained from plants.
- (ii) A variety of plants and animals are utilised as sources of food.
- (iii) Medicinal plants act as sources of drugs.
- (iv) Plants and animals also have a cultural and aesthetic value.

d. Sacred Groves.

Answer:

- i. The forest protected or conserved in the name of God (on religious grounds) and considered to be sacred is known as sacred grove or Devrai.
- ii. Sacred groves are in fact sanctuaries conserved by society and not by the government forest department.
- iii. It has special protection, as it has been conserved due to special religious importance.
- iv. Sacred groves are present not only in the Western Ghats of India but in the entire country.
- v. More than 13000 sacred groves have been identified all over India.

e. Disaster and its management.

Answer:

- To save human life from disasters. To help them for moving away from the place of disasters by rapid action.
- To supply essential commodities to the affected people. This helps to reduce the gravity of disaster. People are given grains, water and clothes and other basic necessities under this objective.

- To bring back the conditions of affected people to normalcy.
- To rehabilitate the affected and displaced victims.
- To think and execute the protective measures in order to develop capability to face the disasters in future.

Question 4.

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

Answer:

1. Pollution is created only due to human activities. Air, water, soil, noise, radiation, thermal, light, plastic are different types of pollution.
2. All types of pollution affect environment and particularly threatening the survival of living organisms.
3. Pollution must be controlled in order to have good quality of the environment.
4. Similarly, when we reduce pollution of different types, we automatically help to regain the environmental health.

Question 5.

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

Answer:

The projects can be undertaken to combat these problems:

1. Tree plantation is one such easier project that can be undertaken to conserve environment. The further nurturing of the tree will also be our responsibility.
2. Solid waste management is another very important project that should be undertaken by every society, colony or school. Segregation of waste into dry and wet types and then its proper disposal will be taught to all the people in the neighbouring area.
3. To ban the plastic and make people aware about harmful effects of plastic is another very significant project.
4. To take care of stray animals, provide shelter, feeding endangered birds like sparrows and allowing them to survive with our support is also one of the essential act to conserve other species.

Question 6.

Answer the following:

a. Write the factors affecting environment.

Answer:

The environment is affected by biotic and abiotic factors such as temperature, pressure, humidity, and organisms like human activity.

Some factors that affect the environment are the following :

- a) Greenhouse Effect** - Greenhouse gases like CO₂, trap the heat from the sun that increases the temperature of the earth.
- b) Trees** - They absorb large amounts of CO₂ and release oxygen and keep balance in the environment.
- c) Population** - Overpopulation affects the environment. It increases pollution and diminishes natural resources.

b. Human beings have important place in environment.

Answer:

- All the natural resources on the earth were very rapidly exploited by man.
- Under the pretext of technology and development he made degradation of almost all natural ecosystems.
- He never obeys the rules of nature.
- Phenomena like pollution, urbanization, industrialization and deforestation are exclusively his creations.
- Hunting and poaching other animals were his contribution to the extinction of many other animals.
- Except man no other organism on the earth can change the ecosystems in such a drastic way. Therefore, it is rightly said that human beings have important place in environment.

c. Write the types and examples of biodiversity.

Answer:

There are 3 types of diversity which are as follows:

Genetic diversity: Genetic diversity refers to the diversity which occurs among the organisms of same species. For example, the diversity which is found among humans, each human being is different from another.

Species diversity: Species diversity refers to the innumerable species of organisms which are found in nature ranging from plants, animals to microbes.

Ecosystem diversity: Ecosystem diversity refers to the various kinds of ecosystem which are found in a region. Each ecosystem will have its own characteristic plants, animals, abiotic factors etc.

d. How the biodiversity can be conserved?

Answer:

Biodiversity can be conserved by the following ways:

- Protection of the rare species of plants and animals.

- Creating habitats for the animals and plants by establishing National Parkland Sanctuaries.
- Declaration of bioreserves, the areas which are protected through conservation.
- Conservation projects for protecting special species.
- Conservation of all flora and fauna.
- Strict observance of the acts and rules.
- Use of traditional knowledge and maintaining record of traditional knowledge.

e. What do we learn from the story of Jadav Molai Payeng? (Board's Model Activity Sheet)

Answer:

- Mr. Molai single handedly transformed a barren land into a forest.
- It was due to his positive attitude, affection towards nature, and hard work, that he could achieve success in planting trees, in over 1360 acres of land.
- From the story of Jadav Molai Payeng, we learn that we all need to make Earth a better place to live for us as well as for the coming generations.
- From his story, it is clear that if a large crowd causes harm to the environment, even a single person, if determined can establish a forest and benefit the environment in great ways.
- Also, if one person can make such an impact, many people coming together in unity to take efforts for environment conservation can bring about a revolution.

f. Write the names of biodiversity hot spots.

Answer:

A biodiversity hotspot is a biogeographic region with significant levels of biodiversity that is threatened with destruction. For example, forests are considered biodiversity hotspots. The Status is designated by Conservation International. To qualify as a biodiversity hotspot on Myers 2000 edition of the hotspot-map, a region must meet two strict criteria: it must contain at least 0.5% or 1,500 species of vascular plants as endemics, and it has to have lost at least 70% of its primary vegetation. Around the world, 35 areas qualify under this definition. These sites support nearly 60% of the world's plant, bird, mammal, reptile, and amphibian species, with a very high share of those species as endemics.

The biodiversity hotspots in India are as follows:

1. The Western Ghats and Sri Lanka.
2. The Eastern Himalayas.
3. Indo-Burma.
4. Sundaland.

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

Answer:

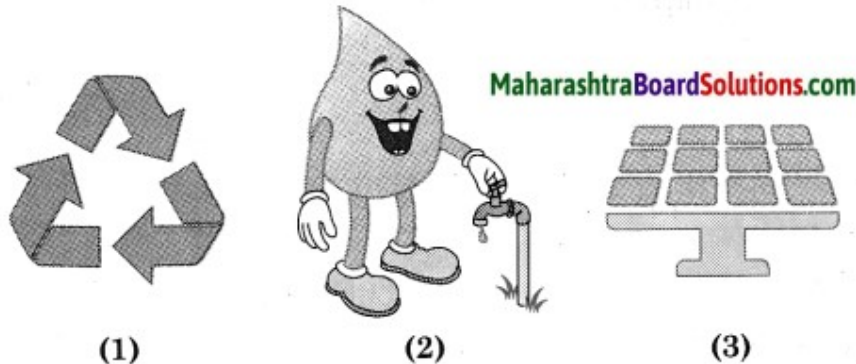
The last 20 years have seen the loss of 27 species. Some of the causes of this loss are:

1. **Habitat loss and fragmentation:** This is the major cause for loss of biodiversity. Habitat destruction is caused by human activities such as deforestation and increasing pollution, leading to the loss of many plants and animals. Habitat fragmentation is the breaking up of habitat of a particular species into fragments.
2. **Over-exploitation:** Humans, because of their greed and increased exploitation of natural resources, have contributed to the endangerment of commercially important species of plants and animals. Species such as the Steller's sea cow and passenger pigeons have become extinct as a result of over-exploitation by humans.
3. **Co-extinction:** When plants or animals become extinct, other plants or animals that are dependant on it in an obligatory way also become extinct.

Endangered plant and animal species can be saved by adopting methods which do not disturb their environment. We need to protect the habitats in which they survive and also protect them from poachers and hunters. Lot of steps are being taken at personal and public level to ensure their protection.

Question 7.

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



Answer:

Symbol 1 represent the recycling which is very important. if we recycle some waste of products instead of making from the raw material then it will be very helpful for our nature also for example recycle of paper is very important instead of cutting trees.

Symbol 2 represent about the conservation of water which is very important for todays as there are some places, we have seen the water shortage in summer season. If we conserve the water, it will give relief from draught.

Symbol 3 represent the solar panels which creates a huge impact for electricity production in today's polluted nature. By reducing the use of petroleum and coal we must focus on solar energy which will be a sustainable development for our nature.