

Chapter: 4

Q.1 Textbook activity question.

12

1 Why is it said that pollution control is important?

- Ans**
- Natural environment consists of air, atmosphere, waater, land, living, organisms, etc.
 - Continuous interactions occur between biotic and abiotic factors. Their interactions are very important.
 - Environmental balance is maintained through continuous operation of various natural cycles like biogeochemical cycles.
 - When some natural factors of environment and some artificial polluted factors harm the environment, it created imbalance between various factors of the environment and ultimately affects the existence of biotic factors.
 - 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.
 - In environment management, we take the task of protecting, conserving and preserving the natural components of the ecosystem.
 - If we control the pollution, then the environmental management activities will succeed and the purpose will be served.
 - If there is minimum pollution, then the nature cycles will continue without any disturbance and biodiversity can be enriched.

2 Which cycles are operated in environment? What is their importance?

- Ans**
- Various cycles operated in the environment are nitrogen cycle, oxygen cycle, carbon cycle, water cycle, etc.
 - Environmental balance is maintained through continuous operation of various cycles.

3 What is difference between food chain and food web?

Ans

Food Chain	Food Web
Linear feeding hierarchy, following a single flow of energy	Graphical model following the interconnected path energy takes in an ecosystem
Single unit	Multiple interconnected pathways
Includes 4-6 trophic levels	Multiple trophic levels
Predators only feed on one specific consumer	Predators feed on multiple consumers

4 What is ecosystem? Which are its different components?

- Ans** An ecosystem includes different communities of plants, animals and microbes together with their physicochemical environments. It consists of two major components, biotic or living components and nonbiotic or nonliving components. Biotic components include plants, animals, decomposers.

5 What may be the relationship between lake and birds on tree?

- Ans**
- A bird building nest on a tree feeds upon the fishes in nearby lake.
 - Also, birds consume worms or small insects that survive on tree.
 - Thus, bird is part of both i.e. tree as well as pond ecosystem.
 - This indicates that in reality an organism may be involed in more than one ecosystem.

6 What is environment?

Ans An Environment is everything that is around us, which includes both living and nonliving things such as soil, water, animals and plants, which adapt themselves to their surroundings. It is nature's gift that helps in nourishing life on the earth.

7 Which are the types of consumers? What are the criteria for their classification?

Ans a. The different types of consumers are :

- i. Primary consumers (Herbivores)
- ii. Secondary consumers (Carnivores)
- iii. Tertiary and / or apex consumers
- iv. Omnivores (Mixed consumers)

b. The criteria for the classification of consumers are mode of nutrition, food requirements, etc.

8 Which factors affect the environment? How?

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

9 What is included in environment?

Ans Environment includes many biotic, abiotic, natural and artificial factors.

10 Which are different trophic levels in food chain?

Ans Level 1: Plants and algae make their own food and are called producers.

Level 2: Herbivores eat plants and are called primary consumers.

Level 3: Carnivores that eat herbivores are called secondary consumers.

Level 4: Carnivores that eat other carnivores are called tertiary consumers.

11 What is energy pyramid?

Ans An energy pyramid is a visual tool that provides structure when quantifying the metabolic energy transfers between different organisms, specifically across trophic levels in an ecological food chain.

12 How do butterflies contribute to environmental balance?

- Ans**
- i. Pollination is essential for plant reproduction and butterflies are effective pollinators.
 - ii. Butterflies also form a food source for predators like birds, reptiles, etc.
 - iii. These creatures are sensitive to changes in climate and pollution.
 - iv. They are indicators of a healthy environment and a healthy ecosystem.

Q.2 Write Short Notes on

1 Chipko Movement of Bishnoi.

- Ans**
- i. The name of the movement comes from the word 'embrace' as the villagers hugged the trees and prevented the contractors from felling them.
 - ii. Many communities in India have helped to save nature. One such is the Bishnoi community of Rajasthan.
 - iii. The original chipko movement was started around 260 years back in Rajasthan by this community. A large group of villagers led by a lady Amrita Devi laid down their lives in an effort to protect the trees from being felled on the orders of the Maharaja of Jodhpur.
 - iv. After this incident the Maharaja gave a strong royal decree preventing the cutting of trees in all the Bishnoi villages
 - v. The success achieved by this protest led to similar protests in other parts of the country.
 - vi. In one such incident in 1970, an opposition of forests destruction spread throughout India and came to be known as the Chipko movement.

2 Biodiversity.

- Ans**
- i. Biodiversity is the richness of living organisms in nature due to the presence of varieties of organisms, ecosystems and genetic variations within a species.
 - ii. Biodiversity occurs at three different levels.
 - a. Genetic Diversity:** Occurrence of diversity among the organisms of same species is genetic diversity. Ex: Each human being is different from the other.
 - b. Species Diversity:** Innumerable species of organisms occurring in the nature is called Species diversity. Species diversity includes various types of plants, animals and microbes.

Ecosystem Diversity: Many ecosystems are present in each region. Ecosystem is formed through the c. interaction between plants, animals, their habitat and changes in the environment. Each ecosystem has its own characteristic animals, plants, microbes and abiotic factors.

3 On the given diagram.



Ans i. This sign is used to indicate 'Save water'.

We must close the taps which are left open and also conserve water.

ii. This sign indicates 'Solar panel'.

This is a renewable source of energy and hence we must use it as an alternative to other conventional energy resources.

4 Sacred Grove.

Ans i. Forests conserved in the name of God and considered to be sacred are called as sacred groves.

ii. They are in fact 'sanctuaries' conserved by the society and not by the government forest department. As they have been conserved in the name of God, they have special protection.

iii. These clusters of thick forests are present not only in the Western Ghats of India but also throughout the country.

iv. More than 13,000 sacred groves have been reported in India.

Q.3 Answer the following.

2

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

Grasshopper - Snake - Paddy field - Eagle - Frog

Ans i. Food chain: Paddy field – Grasshopper – Frog – Snake – Eagle

This food chain belongs to the land ecosystem (grassland). A paddy field is a field where rice is grown.

ii. Grasshoppers inhabit grasslands and paddies and feed on grass-like crops. As paddies are kept flooded with water, they provide a good habitat for frogs and snakes. Grasshoppers are eaten by frogs which, in turn, are eaten by snakes. Eagles feed on snakes.

Q.4 Give examples

2

1 Write the names of biodiversity hotspots.

Ans (i) Hotspots are the richest and most threatened reservoirs of plant and animal life on Earth. 34 highly sensitive biodiversity hotspots are reported all over the world.

(ii) Some of the biodiversity hotspots present in India are -

(a) Eastern Himalayas

(b) Indo-Burma

(c) Western Ghats

(d) Sundaland (Andaman and Nicobar)