

Our Environment

Q1. What are the trophic levels? Give an example of a food chain and state the different trophic levels in it.

Solution:

In the food chain, the transfer of food or energy takes place at various levels and these levels are known as trophic levels.

Example:

Grass → Goat → Man

In the food chain,

- Grass represents the first trophic level
- The goat represents the second trophic level
- Man represents the third trophic level

Q2. What is the role of decomposers in the ecosystem?

Solution:

Following is the role of a decomposer in the ecosystem:

- They act as a cleansing agent of the environment by decomposing the dead plants and animals
- They help in recycling the nutrients
- They provide space for new beings in the biosphere by decomposing the dead
- They help in putting back the various elements into water, soil and air for the reuse of producers like crop plants.

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Q1. Why are some substances biodegradable and some non-biodegradable?

Solution:

The reason why some substances are biodegradable and some non-biodegradable is because the microorganisms like bacteria and decomposers like saprophytes have a specific role to play. They can breakdown only natural products like paper, wood, etc. but they cannot breakdown man-made

products like plastics. Based on this, some substances are biodegradable and some non-biodegradable.

Q2. Give any two ways in which biodegradable substance would affect the environment.

Solution:

Following are the ways in which biodegradable substances would affect the environment:

- They keep the environment clean as they are easily decomposed.
- They can easily go through the geochemical cycle with the help of decomposers.

Q3. Give any two ways in which non-biodegradable substances would affect the environment.

Solution:

Following are the ways in which non-biodegradable substances would affect the environment:

- They cause air, soil and water pollution.
- They may cause bio-magnification in the food chain resulting in the end of human.

In-text Questions Page: 264

Q1. What is ozone and how does it affect the ecosystem?

Solution:

Ozone is a molecule formed by the three atoms of oxygen and is known as an isotope of oxygen. The main function of ozone layer is to provide protection to the earth's surface from the harmful UV rays of the sun. These rays are harmful to living organisms and may result in skin cancer.

Q2. How can you help in reducing the problem of waste disposal? Give any two methods.

Solution:

Following are the ways to reduce the problem of waste disposal:

- 3 R's: By following the 3 R's one can reduce the problem of waste disposal. The 3 R's are reduce, recycle and reuse. Reducing the usage of their own vehicles and opting for public transport can reduce air pollution. Recycling and reusing of plastics is also a way to reduce waste disposal.
- Preparation of compost: All the biodegradable waste like kitchen waste, can be dumped in the compost.

Which of the following groups contain only biodegradable items?

- (a) Grass, flowers and leather
- (b) Grass, wood and plastic
- (c) Fruit peels, cake and lime-juice
- (d) Cake, wood and grass

Solution : Groups (a), (c) and (d).

9. Which of the following constitute a food chain?

- (a) Grass, wheat and mango
- (b) Grass, goat and human
- (c) Goat, cow and elephant
- (d) Grass, fish and goat.

Solution : (b) Grass, goat, human

10. Which of the following are environment-friendly practices?

- (a) Carrying cloth-bag to put purchases in while shopping.
- (b) Switching off unnecessary lights and fans.

(c) Walking to school instead of getting your mother to drop you on her scooter.

(d) All of the above.

Solution : (d) All of the above.

11. What will happen if we kill all the organisms in one trophic level?

Solution : If we kill all the organisms in one trophic level, the number of individuals in the next trophic level will decrease due to non-availability of food. Also, the number of individuals in the previous trophic levels will increase because there is no one to feed on them. This will cause imbalance in the environment.

12. Will the impact of removing all the organisms in a trophic level be different for different trophic levels? Can the organisms of any trophic level be removed without causing any damage to the ecosystem?

Solution : Yes, the impact of removing all the organisms in a trophic level will be different for different trophic levels. For example, on removing producers; herbivores would not be able to survive or they would migrate and ecosystem would collapse. If herbivores are removed, producers would grow unchecked and carnivores would not get food. If carnivores are removed, herbivores would increase to unsustainable levels and could destroy the producers. If decomposers are removed, the dead animals would pile up due to which the environment would become polluted. In addition to this, if dead animals will not decompose, the recycling of nutrients in the soil will be stopped and its fertility will be reduced. As a result the green cover of the earth will be lost. Thus to maintain the balance of the ecosystem the presence of organisms is necessary at each trophic level.

13. What is biological magnification? Will the levels of this magnification be different at different levels of the ecosystem?

Solution : The phenomenon of progressive increase in concentration of certain harmful non-biodegradable chemicals such as DDT at different levels of food chain is called biological magnifications.

The concentration of harmful chemicals will be different at different trophic levels. It will be lowest in the first trophic level and highest in the last trophic level of the food chain.

14. What are the problems caused by the non-biodegradable wastes that we generate?

Ans: Following are the problems caused by the non-biodegradable wastes that we generate:

- They do not disintegrate and get accumulated within the setting.
- Harmful non-biodegradable chemicals enter the organic phenomenon and cause biological magnification.
- They cause air, land, water and soil pollution.
- If not treated, the native population of animals, birds, plants and humans is severely suffering from intense non-biodegradable wastes there in space.
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15. If all the waste we generate is biodegradable, will this have no impact on the environment?

Ans: If the quantity of perishable waste will increase, then this excess perishable waste will certainly have an impression on the surroundings. The surplus perishable waste is rotten by the action of decomposers then it releases harmful greenhouse gases. These gases can accumulate within the atmosphere, inflicting warming. Perishable waste is recycled simply by the decomposers like bacteria and fungi. It'll have solely this dangerous impact on our surroundings that several Of the gases discharged throughout the decomposition method might end in global warming.

16. Why is damage to the ozone layer a cause for concern? What steps are being taken to limit this damage?

Ans: The ozone layer is the protective layer of the earth from harmful rays. It plays a significant role in protecting all living and nonliving organisms. If a layer is broken no organism will survive. Following measures, the steps being taken to limit this harm.

- We must always minimize the employment of vehicles.

- We must always not encourage the burning of fossil fuels.
- It's currently necessary for all the producing firms to form CFC- free refrigerators throughout the globe.

