

NCERT Solutions for Class 10 Science

Chapter 13 – Our Environment

Intext Questions with Solutions of Class 10 Science Chapter 13 – Our Environment

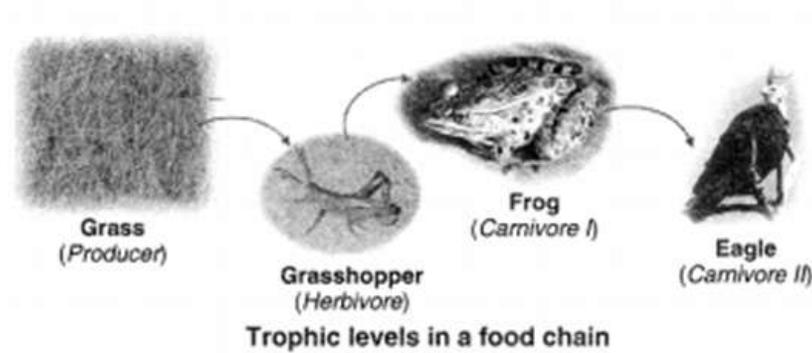
1.

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

Ans: Trophic Levels: The distinct stages in a food chain where the transmission of food or energy occurs are referred to as trophic levels.

Illustration: A food chain functioning in a grassland is presented below:

Grass → Insects → Frog → Birds



Within this trophic hierarchy

1. Grass constitutes the primary trophic level.
2. The grasshopper occupies the second trophic level.
3. The frog occupies the third trophic level.
4. The eagle signifies the fourth trophic level.

2.

What is the role of decomposers in the ecosystem?

Ans:

- i. Decomposers facilitate the decomposition of deceased flora and fauna, hence serving as environmental cleansing agents.
- ii. Decomposers facilitate the reintroduction of the many elements of deceased flora and fauna into the soil, atmosphere, and water for reutilization by producers such as crop

plants.

iii. They facilitate the recycling of nutrients.

iv. They breakdown deceased organic matter, so creating place for new life to inhabit the biosphere.

3.

Why are some substances biodegradable and some non-biodegradable?

Ans: The distinction between biodegradable and non-biodegradable compounds arises from the particular roles of microbes, such as bacteria, and decomposers, like saprophytes. They can decompose only natural materials such as paper and wood, but they are incapable of breaking down synthetic items like plastics. Consequently, certain compounds are biodegradable while others are non-biodegradable.

4.

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

Ans: The subsequent points outline how biodegradable substances impact the environment:

- They maintain a clean environment due to their ability to decompose easily.
- Decomposers facilitate the efficient progression of the geochemical cycle.

5.

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

Ans:

- They pollute the earth, water, and air.
- They might reach humans through bio-magnification in the food chain.

6.

What is ozone and how does it affect any ecosystem?

Ans: Ozone is an oxygen isotope, which is a molecule composed of three oxygen atoms. The ozone layer's principal role is to protect the earth's surface from the sun's dangerous UV rays. These rays are hazardous to living creatures and may cause skin cancer.

7.

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

Ans: The subsequent methods aim to mitigate the issue of garbage disposal:

- Three Rs: Adhering to the three Rs can mitigate the issue of garbage disposal. The three Rs are reduce, recycle, and reuse.
- Decreasing the reliance on private vehicles and utilizing public transportation helps mitigate air pollution. Recycling and repurposing plastics is a method to diminish trash disposal.
- Compost preparation: All biodegradable waste, such as kitchen refuse, may be deposited in the compost.

Exercise Questions with Solutions of Class 10 Science Chapter 13 – Our Environment

1.

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

Ans: (a) Grass, flowers and leather.

2.

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

Ans: (b) Grass, goat and human.

3.

Which of the following are environment-friendly practices?

- (a) Carrying cloth-bags 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**

Ans: (d) All of the above.

4.

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

Ans: If we kill all the organisms in one trophic level, the next level will no longer have any food, which will throw the environment out of balance. Because of this, animals higher up in the food chain will die, which will make animals lower down in the food chain grow very quickly. All of these things will throw off the ecosystem's balance.

5.

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?

Ans: Yes, the impact of removing all species from a trophic level will differ depending on the trophic level. For example, removing producers would prevent herbivores from surviving or migrating, causing the ecosystem to collapse. If herbivores are removed, producers will grow unfettered, and carnivores would be unable to feed. If carnivores are removed, herbivore populations will reach unsustainable levels, potentially destroying producers. If decomposers are removed, dead animals will pile up and damage the ecosystem. Furthermore, if dead animals do not decompose, the soil's nutrient cycle will be disrupted, reducing fertility. As a result, the Earth's green cover will be lost. To preserve ecosystem equilibrium, creatures at each trophic level must exist.

6.

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

Ans: Biological magnification refers to the escalation in the concentration of deleterious chemical agents, such as pesticides, within the bodies of living animals at each trophic level of an ecosystem. Indeed, levels of biomagnification would escalate as the biological process level intensifies, optimizing conditions for the apex trophic level. It may influence their biological processes such as growth, reproduction, etc.

7.

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

Ans: The issues that arise from non-biodegradable garbage are:

- If there is more non-biodegradable stuff in the environment, then more toxic compounds build up in our bodies.
- There won't be any new organisms if the non-biodegradable garbage keeps growing.
- The growing amount of non-biodegradable that can't break down will throw the ecology out of balance.

8.

If all the waste we generate is biodegradable, will this have no impact on the environment?

Ans: Biodegradable trash is degraded by microorganisms into simpler elements that can be utilized by companies as raw materials. However, the subsequent consequences of excessive biodegradable waste are as follows:

The gradual decomposition of biodegradable garbage generates an unpleasant odor, which can be detrimental to humans when inhaled.

The disposal sites may serve as breeding grounds for detrimental species, posing risks to humans, plants, and animals.

An escalation in the population of aquatic species may lead to oxygen depletion.

9.

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

Ans: Our planet is protected by the ozone layer. It obstructs detrimental UV radiation from penetrating the Earth, as these rays are hazardous and may lead to skin cancer. Air pollutants, such as chlorofluorocarbons (CFCs), are the primary cause of ozone layer depletion. Excessive UV

radiation is detrimental to plants as it impairs photosynthesis and annihilates plankton and decomposers. The deterioration to the ozone layer is a matter of concern for the following reasons.

To mitigate this issue, numerous developing and developed nations have ratified and are adhering to the directives of the United Nations Environment Programme (UNEP) to halt or restrict the manufacture and utilization of CFCs.