

CBSE Class 10 Science
NCERT Solutions
Chapter - 15
Our Environment

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

Ans. Substances which can be acted upon by micro-organism (decomposer) are called biodegradable. For example- vegetable wastes, paper, cotton etc.

On the other hand, materials which are not acted upon by decomposers are called non-biodegradable. For example- plastic, glass, polyethene etc.

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

Ans. (a) They will serve as breeding ground for flies and mosquitoes which are carriers of disease like cholera, malaria etc.

(b) They produce foul smell, thus causing air pollution.

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

Ans. (a) Excess use of non-biodegradable pesticide and fertilizers run off with rain water to water bodies causes water pollution.

(b) They may choke the sewer system of city or town that may overflow over roads.

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

Ans. Each step in a food chain constitutes a trophic level. For example,

| | | |
|-----------------|------------------|-------------------|
| Grass → | Dear → | Lion |
| Trophic level I | Trophic level II | Trophic level III |

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

Ans. They decompose dead remains of plants and animals and their wastes organic products into simple inorganic substances which are released into the atmosphere for reuse by the plants. Thus, they help in recycling of materials.

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1. What is a ozone and how does it affects any ecosystem?

Ans. Ozone is a form of oxygen. It has the molecular formula O_3 . It is present at a higher level in the atmosphere. It protects the ecosystem from the harmful effects of ultraviolet rays coming from the Sun. UV rays may cause skin cancer, cataract to us.

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

Ans. The following measures can be adopted for reducing the problem of waste disposal:

(i) Reduce the volume of wastes by burning in incinerator.

TEXTBOOK EXERCISES

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

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, human

3. 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.

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 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.

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 the organisms of a trophic level will be different for different trophic levels. The effect will be time related. If we remove all the producers, primary consumers will be affected instantly. Secondary consumers will affect after a gap and tertiary consumers after a longer gap.

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

different levels of the ecosystem?

Ans. The phenomenon of progressive increase in concentration of certain harmful non-biodegradable chemicals such as DDT at different trophic 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.

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

Ans. (a) Non-biodegradable pesticides and fertilizers run off to water bodies to cause water pollution.

(b) Some of the non-biodegradable pesticides like DDT enter the food chain and cause biomagnifications in humans and other animals.

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

Ans. It will have only short term impact on environment, the action of decomposers will slow down and some air/water pollution will be caused. However, in longer term, there will be no impact of biodegradable wastes on the environment.

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

Ans. Ozone layer prevents ultraviolet radiations from the Sun from reaching the earth. Ultraviolet rays cause cancer, cataract and damage to the immune system of human beings.

In 1987, United Nations Environment Programme (UNEP) succeeded in forging an agreement between nations to freeze chlorofluorocarbons (CFCs) production to 1986 levels. CFCs are the main cause of ozone layer depletion.