**SYMBIOSIS SCHOOL, NASHIK**

**STD : X**

**SUB : BIOLOGY L.NO. 15 Our environment**

**Text book Questions**

Concepts : 1. Ecosystem and its components

2. Food chains and food webs

3.Ozone layer and its depletion

4. Waste management

Note : Write the Question answers in the notebook

Q.1. What are trophic levels? Give an example of food chain and state the different trophic

levels in it.

Ans. i) The unidirectional flow of energy in the form of food from one organism to other is called

food chain.

ii) Each step or the level of food chain is called trophic level

iii) Eg. Of food chain grass insects frog snake

|  |  |  |
| --- | --- | --- |
| Trophic level | Type of organism | Example |
| I | Producers | Grass |
| II | Primary consumers | Insects |
| III | Secondary consumers | Frog |
| IV | Tertiary consumers | Snake |

iv)

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

Ans. The decomposers breakdown the complex substances in the dead bodies of plants and animals

into simple substances. They help the environment in the following ways :

i) They keep the environment clean.

ii) They help in recycling of nutrients.

iii) They increase the fertility of the soil.

Q.3. Why are some substances biodegradable and some non-biodegradable. Give examples.

Ans. i) Some substances are broken down into simple substances by the action of enzymes secreted

by the bacteria and fungi. They are called biodegradable substances.

Eg. Vegetable peels, fruit peels, wood, paper

ii) Some substances are not broken down into simple substances by the action of enzymes

secreted by the bacteria and fungi. They are called non-biodegradable substances.

Eg. Plastic, themocole, glass, metals

Q.4. Give any 2 ways by which biodegradable substances affect the environment.

Ans. Biodegradable substances affect the environment in the following ways :

i) They release the nutrients back to the soil after decomposition and increase the fertility of

the soil.

ii) They can provide breeding ground for many disease causing organisms like flies, rats etc.

iii) They release foul smell.

Q.5. Give any 2 ways by which non-biodegradable substances affect the environment.

Ans. Non-biodegradable substances affect the environment in the following ways :

i) They remain in the environment for long time and cause the pollution.

ii) They enter the food chain and cause biological magnification which is harmful.

Q.6. What is ozone? How is it formed? How does it affect any ecosystem?

Ans. i) Ozone (O3) is the molecule made up of three atoms of oxygen. It is found in upper layers

of atmosphere.

ii) The high energy UV radiations split apart some molecular oxygen (O2) into free oxygen(O).

These O atoms then combine with the molecular oxygen to form ozone as follows :

Write the reactions given on page no. 261

iii) Ozone affects the ecosystem in following ways :

1. At lower levels, it is a deadly poison.

2. At higher levels, it protect the earth from harmful UV rays of the sun.

Q.7. How can you help in reducing the problem of waste disposal?

Ans. We can help in reducing the problem of waste disposal in following ways :

i) Separate biodegradable and non-biodegradable waste.

ii) Biodegradable waste should be converted into compost.

iii) Non biodegradable waste can be either reused or recycled.

iv) Using more biodegradable substances and reducing the use of

non-biodegradable substances.

Q.8. What will happen if we kill all the organisms in one trophic level?

Ans. i) If we kill all the organisms in one trophic level, the organisms in the lower trophic level

would increase in number and the organisms of the next trophic level would decrease

in number.

ii) This will disturb the food chain and will lead to imbalance in nature.

Q.9. 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 the

damage to the ecosystem?

Ans. i) No, the impact of removing all the organisms in a trophic level will be same for different

trophic levels.

ii) The organisms of previous trophic level would increase in number and organisms of next

trophic level would decrease in number.

iii) This will cause imbalance in the ecosystem.

iv) Organisms of any trophic level cannot be removed without causing damage to the ecosystem

because all the organisms are interdependent on each other.

v) Harm caused to one organism will cause disturbance to other organisms too.

Q.10. What is biological magnification? Will the levels of this magnification be different at different

trophic levels of the ecosystem?

Ans. i) Accumulation of non biodegradable toxic substances in the food chain and the increase in

their concentration in the successive trophic levels is called biological magnification

ii) Yes, the levels of this magnification will be different at different levels of ecosystem.

As the trophic level increases, the concentration of toxic substance also increase.

iii) The top level consumers will have highest concentration of toxic substances.

Q. 11. What are the problems caused by the non-biodegradable waste that we generate?

Ans. The problems caused by non biodegradable waste are as follows :

i) They remain in the environment for long time and cause pollution.

ii) They release harmful gases in the environment when burnt.

iii) They choke the drains and stop the flow of water.

iv) Substances like plastics can enter the digestive system of animals and cause death.

v) They cause biological magnification.

Q.12. If all the waste we generate is biodegradable , will this have no impact on the environment?

Ans. If all the waste we generate is biodegradable, it will still have the impact on the environment

in the following ways :

i) Large areas will get filled as land fills and be of no use.

ii) If the waste is not decomposed properly, it lead to breeding ground for many disease

causing organisms.

iii) When this waste is burned, it cause pollution.

iv) When it decomposes, it produce methane which is a green house gas

ie. Cause global warming.

v) The heaps of garbage release the foul smell and destroy the scenic beauty of the place.

Q.13. Why is damage to the ozone layer a cause of concern? What steps are being taken to limit

this damage?

Ans. i) Ozone layer is getting depleted due to the synthetic chemicals called Chloroflurocarbons

(CFCs) released from the refrigerants , air conditioners and fire extinguishers.

ii) The damage to the ozone layer is a cause of concern because it protects the earth from

harmful UV rays of the sun. If ozone layer gets depleted , these UV rays will come to earth’s

surface and cause damage to living organisms including skin cancer in humans.

iii) In 1987, the United Nations Environment Programme (UNEP) succeeded in forging an

agreement to freeze CFC production at 1986 levels. It is mandatory for all manufacturing

companies all over the world to make CFC-free refrigerators.