Short Answer Type Questions – I

[2 Marks]

Q. 1. Why are crop fields known as artificial ecosystems?

Ans. Crop fields are man-made and some biotic and abiotic components are manipulated by humans. Therefore, they are known as artificial ecosystems.

Q. 2. Suggest one word for each of the following statements/definitions:

(i) The physical and biological world where we live in.

(ii) Each level of food chain where transfer of energy takes place.

(iii) The physical factors like temperature, rainfall, wind and soil of an ecosystem.

(iv) Organisms which depend on the producers either directly or indirectly for food.

Ans. (i) Environment/biosphere

(ii) Trophic level

(iii) Abiotic factors

(iv) Consumers/heterotrophs

Q. 3. Why are bacteria and fungi called decomposers? List any two advantages of decomposers to the environment.

Ans. Bacteria and fungi are called decomposers because bacteria and fungi break down the dead and decaying organic matter into simpler substances and provide the nutrients back to the soil. Advantages of decomposers to the environment:

(i) They act as natural scavengers.

(ii) They help in recycling of nutrients.

Q. 4. Consider the food chain: Grass→ Deer→Lion. What will happen if lions are removed from the above food chain?

Ans. Removal of lions from the above food chain will increase the number of deer to such an extent that they will eat up the whole grass. The density of producer like grass will be very much reduced and this will turn the area into a desert

Q. 5. Which of the following belongs to the same trophic level?

Grass, Hawk, Rabbit, Frog and Deer.

Ans. Grass is producer, hawk and frog are carnivores (top and lower), rabbit and deer are herbivores. Since rabbit and deer are both herbivores, they belong to the same trophic level.

Q. 6. Write the common food chain of a pond ecosystem.

Ans. Phytoplanktons and aquatic plants →small aquatic animal larvae and insects →fishes→birds.

Q. 7. In a lake contaminated with pesticides, which one of the following organism living in the lake will contain the maximum amount of pesticide?

Small fish, zooplankton, big fish, phytoplankton.

Ans. The concentration of pesticide will increase with the rise of trophic level in the food chain.

Phytoplankton →Zooplankton →Small fish → Big fish (maximum pesticide)

Therefore, big fishes will have maximum amount of pesticides.

Q. 8. What is the percentage of solar energy trapped and utilised?

Ans. 1 % in terrestrial habitats and 0.2% in aquatic ecosystems is the percentage solar energy trapped and utilised.

Q. 9. Why does a food chain consist of only three to four steps?

Ans. On an average, only 10% of the food available to a trophic level is transferred to the next trophic level. Since, the amount of available energy keeps on becoming less as we move to higher trophic levels, so very little usable energy remains after four trophic levels. That is why a food chain consists of only three to four steps.

Q. 10. With the help of an example explain how indiscriminate use of pesticides may result in the degradation of the environment.

Ans. Indiscriminate use of pesticides may result in the degradation of the environment. For example, DDT is an organic pesticide which is used to kill pests in crop fields. When it is used in large quantity it can be passed along the food chain from crops to man or other animals and birds and can harm them.

Q. 11. State any two practices which can help in the protection of our environment.

Ans. Two practices which can help in the protection of our environment are:

(i) Disposal of the waste after its separation as biodegradable and non- biodegradable material.

(ii) Judicious use of unleaded petrol and alternate sources of energy

Q. 12. What are the by-products of fertiliser industries? How do they affect the environment?

Ans. The harmful by-products are gases such as SO_2 and NO. They cause extensive air pollution and are responsible for acid rain.

Q. 13. The number of malarial patients in a village increased tremendously when large number of frogs were exported from the village. What could be the cause for this?

Ans. The food chain in the given situation will be:

Phytoplankton→Zooplankton→Mosquito larva →Frogs

In the absence of frogs (as they were exported), more mosquito larvae survived giving rise to large number of mosquitoes. The large number of mosquitoes caused increased incidences of malaria.