

1 Marks Questions: [5]

1. Which of the following organism is likely to have maximum concentration of DDT :

Algae, fish, water flea, frog, bird

2. What is the role of bacteria and fungi in an ecosystem?

3. What are trophic levels?

4. How much energy is transferred to the next trophic level in a food chain?

5. Which trophic level has the highest concentration of toxic substances in a food chain?

Two marks questions [10]

6. Mention some sources of CFC's.

7. Distinguish between a food chain & a food web

8. What would happen if there are no decomposers on earth?

9. What is a food chain? Write a five step food chain found in grass land with frog as one of the members. What will happen to organisms at different trophic levels if all the frogs are removed?

10. The number of malaria patients increased tremendously when a large number of frogs were exported from the village .What could be the cause for it? Explain with the help of a food chain.

Three marks questions [15]

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

12. Food chains generally consist of only 3 or 4 trophic levels. Why is it so?

13. Observe the food chain

Plant (1000 kJ) --- >Goat ----> Lion

(a) If autographs occupying the first trophic level are called producers what are herbivores

Called as?

(b) How much energy does the lion get in the above food chain?

14. Vegetarian or non vegetarian food habit help us in getting more energy. Why?

15. How is ozone formed in the upper atmosphere? Why is the damage of ozone layer a cause of concern to us? State cause of this damage.

Answer:

1. Bird

2. Bacteria and fungi break-down (decompose) dead remains of plants & animals into simple substances.

3. The various steps in the food chain where transfer of food energy takes place are called trophic levels.

4. Only a 10 % amount of the total available energy is transferred from one trophic level to the next.

5. Top carnivores

6. Aerosols, solvents, refrigerants and fire extinguishers

7. Food chain

1. The process of eating and being eaten to transfer food energy.

2. It forms a part of food web.

3. It has limited populations.

Food web

1. It is a system of interconnected food chains.

2. It contains many food chains.

3. It has several populations of different species.

8. if there are no decomposers on earth it will cause:

(a) Heaping up of dead remains of plants and animals. (b) No cycling of nutrients.

9. Grass → Grasshopper → Frogs → Snakes → Hawk
Death of frogs will starve the snakes and hawk. They will also be killed. The number of grass hoppers will increase to such an extent that the whole grass is eaten up and this will in turn starve & kill the grasshoppers & the area is turned into a desert.

10. Phytoplankton → Zooplankton → Mosquito larvae → Frogs
In the absence of frogs more mosquito larvae survived. The large number of mosquitoes caused increased incidence of malaria.

11. Ans. Non-biodegradable wastes create several environmental problems. As for example, poisonous chemicals like DDT and other pesticides remain as such in the biosphere for a long time. These enter the food chain where they get biomagnified at each trophic level and it causes harm in every trophic level. Non-biodegradable wastes create pollution which in turn creates different diseases among the organisms.

12. Only 10 % amount of the total available energy is transferred from one trophic level to the next. The loss of energy at each step is so great that very little usable energy remains after four trophic levels.

13. 8. (a) Herbivores occupying the second trophic level are called consumers.

(b) Plant --> Goat -----> Lion

(1000 kJ) (100 kJ) (10 kJ)

The lion gets 10 kJ energy in the above food chain.

14. Only a 10 % of the total available energy is transferred from one trophic level to the next. Vegetarians occupy the second trophic level & get stored energy of plants directly whereas non-vegetarians occupy the third trophic level & get food from animals.

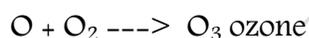
Producer → Human

1000 J 100J

Producer → Herbivore → Human

1000 J 100 J 10J

15. The ozone layer occurs naturally in the stratosphere. The ozone layer is formed when intense UV radiation from the sun causes ordinary molecules of oxygen (O₂) in the stratosphere to dissociate into single oxygen atoms (O). Single oxygen atoms are very reactive and combine with O₂ to form O₃.



Ozone layer has become a cause of concern because depletion of ozone layer can cause serious effects on human body and other organisms of the environment like eye damage, skin damage, cancer, etc.

CFCs, nitrous oxide, methane, chlorine, etc., are responsible for the damage of ozone layer.