

NYQs

"Next Year Questions"



Our Environment

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Our Environment

Q1. Some waste products are listed below:

- Grass Cutting
- Polythene Bag
- Plastic Toys
- Used Tea Bags
- Old Clothes
- Paper Straw

Which group of waste materials can be classified as non-biodegradable?

- a) Plant waste, used tea bags
- b) Polythene bags, plastic toys
- c) Used tea bags, paper straw
- d) Old clothes, broken footwear

Q2. The amount of energy that flows from one trophic level to another in a food chain is

- a) 5%
- b) 10 %
- c) 20 %
- d) 15 %

Q3. With regard to various food chains operating in an ecosystem, man is a:

- (a) Consumer
- (b) Producer
- (c) Producer and consumer
- (d) Producer and decomposer.

Q4. Food web is constituted by

- (a) relationship between the organisms and the environment
- (b) relationship between plants and animals
- (c) various interlinked food chains in an ecosystem
- (d) relationship between animals and environment

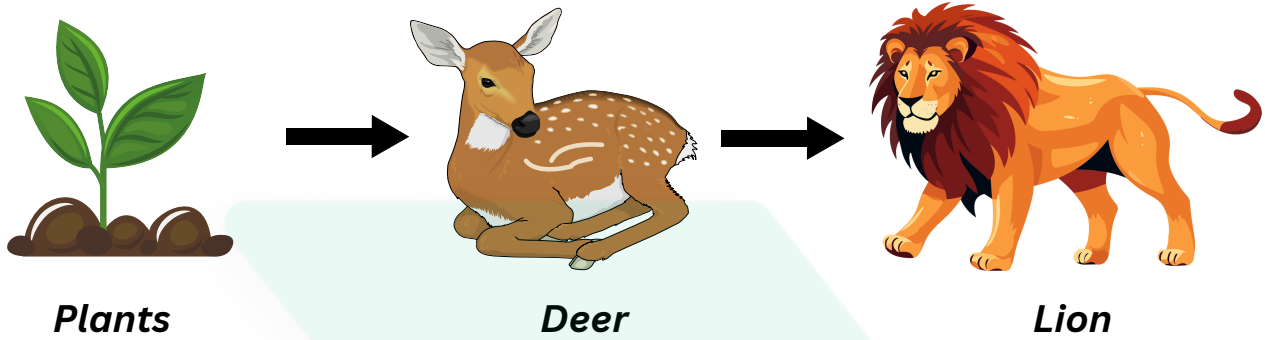
Q5. The harmful chemical which is accumulating in human beings through the food chain is

- a) BHC
- b) DDT
- c) Absciscic acid
- d) CFC

10th Phodenge!



Q6. In the following food chain, 100 J of energy is available to the lion. How much energy was available to the producers?



Q7. Why do producers always occupy the first trophic level in every food chain?

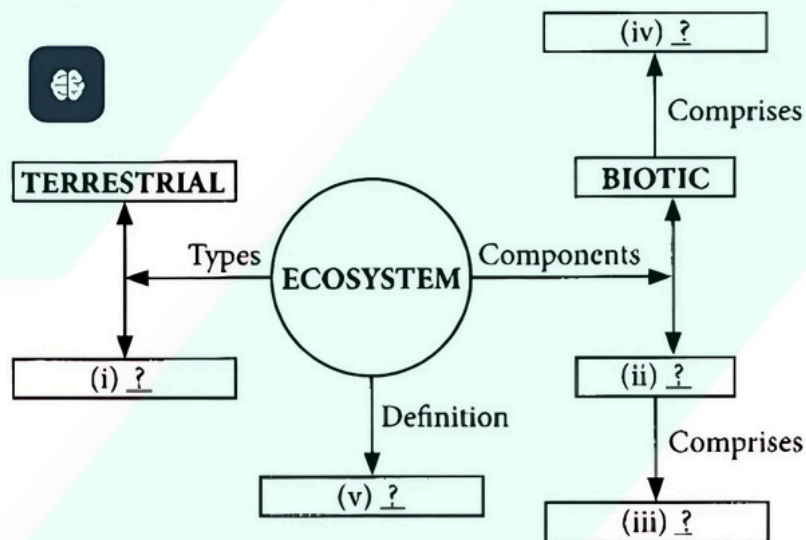
Q8. Bacteria and fungi are called decomposers. Why?

Q9. What does a trophic level represent in a food chain? State the position of autotrophs and herbivores in a food chain.

Q10.(a) What is an ecosystem?

(b) List any two natural ecosystems.

Q11. Complete the following flow chart based on ecosystem and its components.



Q12.(a) Construct a terrestrial food chain comprising four trophic levels.

(b) What will happen if we kill all organisms in one trophic level?

(c) Calculate the amount of energy available to the organisms at the fourth trophic level. If the energy available to the organisms at the second trophic level is 2000 J.

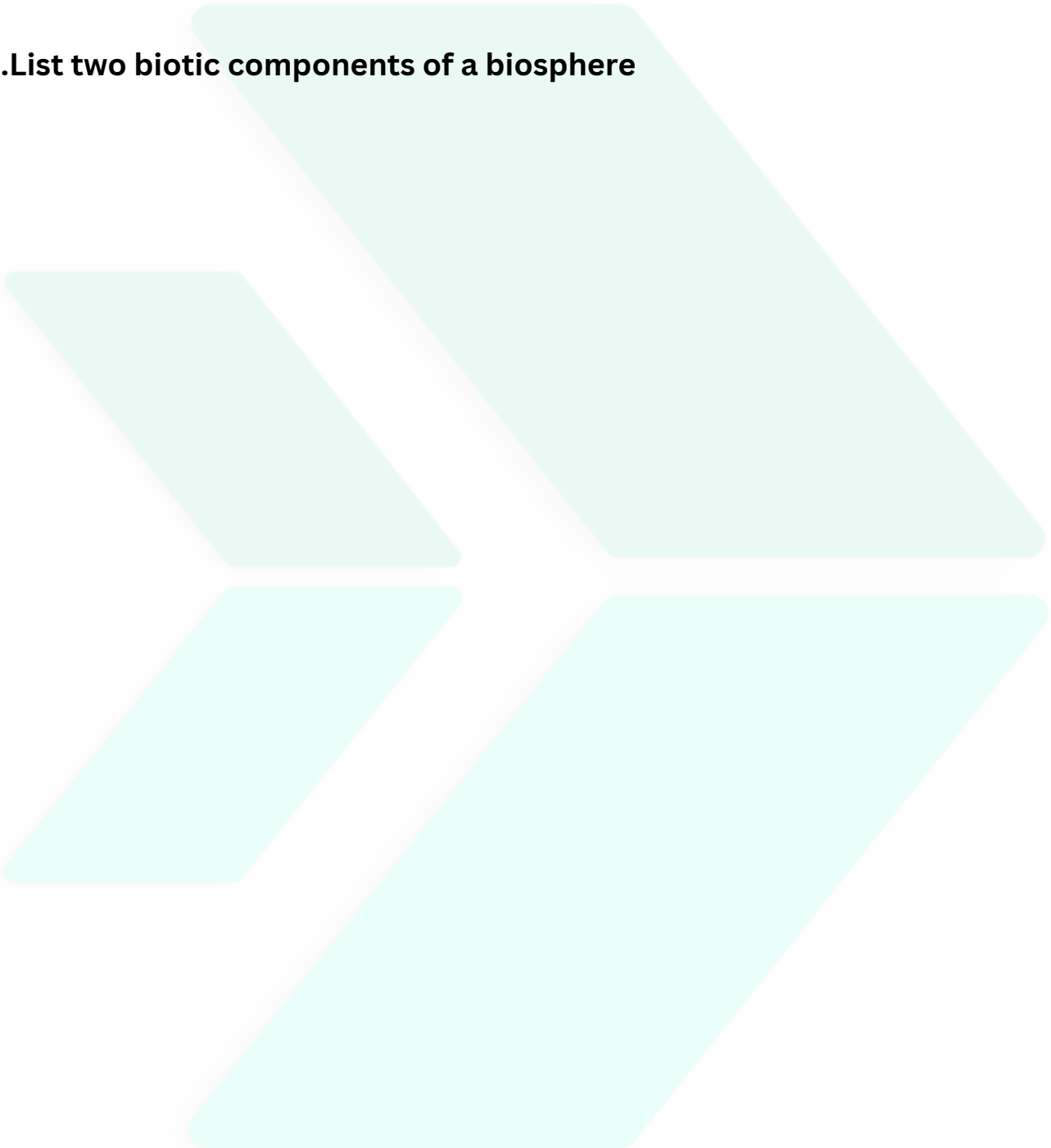
Q13. What is the function of ozone in the upper atmosphere?

Q14. You have been selected to talk on “Ozone layer and its protection” in the school assembly on ‘Environment Day’.

(a) Why should ozone layer be protected to save the environment?

(b) List any two ways that you would stress in your talk to bring in awareness amongst your fellow friends that would also help in protection of ozone layer as well as the environment

Q15. List two biotic components of a biosphere



SOLUTION

Ans1.b

Ans2.b

Ans3.a

Ans4.c

Ans5.b

Ans6.As per 10% law of flow of energy in an ecosystem only 10% of energy is received by the next trophic level. Hence, in the given food chain : If 100 .J of energy is available to lion, the plants or producers have 10,000 J of energy available to them.

Plants	→	Deer	→	Lion
10,000 J		1000 J		100 J

Ans7.Producers are the green plants that can manufacture food using CO₂ and H₂O in the presence of sunlight, i.e., they are autotrophs. They serve as a source of food for all non-producers or consumers directly or indirectly. Hence, producers occupy the first trophic level in a food chain.

Ans8.Bacteria and fungi are called decomposers because these microorganisms break down the complex organic matter present in dead plants and animals into simpler substances.

Ans9.Trophic level represents each of several hierarchical levels of a food chain operating in an ecosystem, consisting of organism sharing the same function in the food chain and the same nutritional relationship to the primary sources of energy.

The position of producers (or autotrophs) in a food chain constitute the first trophic level. They fix up sun's energy and make it available for consumers. The herbivores or primary consumers (which feed upon plants) constitute the second trophic level in a food chain.

Ans10.(a) An ecosystem is defined as a structural and functional unit of the biosphere comprising of living organisms and their non-living environment.
(b) Two examples of natural ecosystem are: pond ecosystem and grassland ecosystem

Ans11.

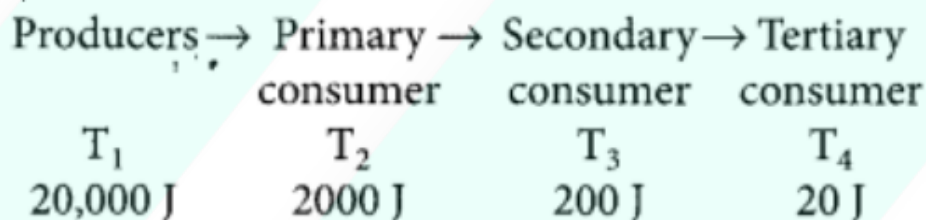
- (i) Aquatic
- (ii) Abiotic
- (iii) Inorganic substances
- (iv) Producers
- (v) Structural and functional unit of biosphere

Ans12. (a) A terrestrial food chain with four trophic levels is :

Grass → Insect → Frog → Eagle

(b) Removal of the organisms of any trophic level will always adversely affect the ecosystem, e.g., the removal of lions and tigers (top carnivores) will cause rapid increase in deer population, which leads to rapid consumption of vegetation resulting in scarcity of vegetation and population crash of deer.

(c) According to ten percent law, only 10% of the energy is received by the next trophic level.



If the energy available at second trophic level (T₂) is 2000 J, so the 20 J of energy will be at fourth trophic level (T₄).

Ans13. Ozone (O₃) gas forms a protective shield in the upper atmosphere that absorbs most of the harmful ultraviolet radiations coming from Sun that can harm human beings, animals and plants. It protects us from various health hazards.

Ans14.((a) The ozone layer is important for the existence of life on Earth because it acts as a protective shield by absorbing harmful ultraviolet (UV) radiation from the Sun. These UV rays can cause serious health problems like skin cancer, cataracts, and damage to the immune system. They also harm

nimals and plants, affecting the environment. Protecting the ozone layer is essential to ensure the safety of all living beings and the planet.

(b) Two ways to protect the ozone layer and the environment are:

- 1. Avoiding the use of products that release CFCs:** These are chemicals found in old refrigerators, air conditioners, and aerosol sprays. We should replace these with ozone-friendly alternatives.
- 2. Minimizing vehicle emissions:** Encourage carpooling, using public transport, or switching to eco-friendly options like electric vehicles to reduce the release of harmful gases that damage the ozone layer.

Ans15. Two biotic components of a biosphere are:

- (i) Producers –** Include organisms which can produce their food using simple inorganic compounds, e.g., all green plants, blue green algae (cyanobacteria).
- (ii) Consumers –** Include organisms which are unable to synthesise their food, therefore, utilise materials and energy stored by the producers or eat other organisms, e.g., all the animals.