



BIOLOGY

BOOKS - BHARATI BHAWAN BIOLOGY (HINGLISH)

OUR ENVIRONMENT

Very Short Answer Questions

1. What is an ecosystem ?



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2. Categorize these as primary, secondary and tertiary consumers, grasshopper, snake, hawk, owl, rat and rabbit.



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3. Give a scientific term for each of the following.

(a) The green plants which synthesize food

(b) Organisms which feed on plants or plant

products

(c) Organisms that can convert dead and decaying organic matter into simpler form.



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4. Give one example of a simple food chain.



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5. Which category of organisms forms the starting point of a food chain ?



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6. Make a flow chart of a food chain commonly found on land.



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7. Define food web.



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8. One hundred kilocalories of energy are available to a trophic level. Approximately how much energy can be transferred to the next higher trophic level?



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9. Food chains usually do not have more than four trophic levels. Why?



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10. Name one category of chemicals that are responsible for the ozone hole.



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Short Answer Questions

1. Describe the components of an ecosystem.



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2. How are heterotrophs different from autotrophs?



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3. What is the importance of decomposers in an ecosystem?



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4. Why do you need to clean an aquarium periodically while ponds do not need to be cleaned?



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5. What do you understand by a trophic level?



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



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7. In what direction does the energy flow in a food chain? Why as it unidirectional?



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8. Usually, why do you have a greater number of organisms at the lower trophic levels?



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9. Construct a food web that has rabbits, plants, herbivorous insects, hawks, sparrows, wolves, spiders, frogs and snakes.



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10. Where is the ozone layer found? What is the importance of ozone layer?



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



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12. What are the problems caused by nonbiodegradable wastes?



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Long Answer Questions

1. All heterotrophs are consumers. How would you classify them?



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2. Explain the flow and loss of energy in an ecosystem.



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3. What is biological magnification? Explain how the level of accumulation of harmful substances varies with trophic levels.



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4. What is the ozone hole? How was it formed?

What is being done to control it?



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Objective Questions

1. In an ecosystem, there is a flow of

A. energy only

B. nutrients only

C. water only

D. energy and nutrients

Answer: D



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2. The ultimate source of energy in an ecosystem is the

A. producer

B. consumer

C. sun

D. decomposer

Answer: C



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3. The biotic component of an ecosystem consists of

A. plants and animals

B. green plants and algae

C. producers, consumers and decomposers

D. air, water and soil

Answer: C



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4. Out of the following, which is a linear arrangement of organisms?

A. Trophic level

B. Ecosystem

C. Food chain

D. Food web

Answer: C



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5. The third trophic level of a grassland food chain can have

A. grass

B. grasshoppers

C. hawks

D. frogs

Answer: D



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6. In a food chain, herbivores constitute the

A. first trophic level

B. second trophic level

C. third trophic level

D. fourth trophic level

Answer: B



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7. Which of the following constitute a food chain?

A. Plant, apple, butterfly, man

B. Grass, spider, bee, buffalo

C. Plants, insect, toad, snake

D. Algae, insect larvae, fish, cow

Answer: C



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8. What happens in biological magnification?

A. There is progressive increase in the level of harmful substances through trophic levels.

B. There is a progressive increase in the body weight through trophic levels.

C. There is a progressive increase in the number of organisms through trophic levels

D. There is progressive increase in biological activities through trophic levels

Answer: A



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9. The flow of energy in an ecosystem is

A. unidirectional

B. bidirectional

C. multidirectional

D. cyclic

Answer: A



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10. Which of the following contain only nonbiodegradable things?

A. Leaves, wood, plastics

B. Polythene, aluminium can, mercury

C. DDT, cow dung, fruit peels

D. Kitchen waste, sewage, pen

Answer: B



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Fill In The Blanks

1. The physical and biological conditions in which an organism lives is its _____.



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2. In a food chain, each position is known as a _____.



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3. Those who feed directly on the producers in an ecosystem are called _____ consumers.



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4. All green plants are _____ , whereas animals are consumers.



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5. If the energy available at a trophic level is 100 units, the energy available at the level just

below it will be about _____ units.



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6. The ozone layer protects us from _____ radiation.



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Very Short Answer Questions

1. Give a scientific term for each of the following :

(a) The component which includes physical environment, nutrients and climatic factors

(b) The physical and biological world where the organisms live

(c) Organisms which eat both plants and flesh of other animals.

(d) A position in a food chain

(e) Accumulation of chemicals at successive trophic levels of a food chain

(f) Organisms which obtain food from other living organisms



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2. Why do herbivores occupy a position next to producers in a food chain ?



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3. Give one example each of herbivore, carnivore and omnivore.



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4. Do microorganisms like bacteria play any role in an ecosystem ?



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5. Why do only autotrophs capture the energy present in the sunlight ?



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6. Why is straight line food chain not common in the natural ecosystem ?



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7. Fertilizers and pesticides are used in the soil. How do they reach the food grains and vegetables ?



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8. What is the position of human beings in any food chain ?



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9. What is the main function of ozone layer of the atmosphere ?



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10. Name the chemical which is mainly responsible for ozone-layer depletion ?



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11. Where are CFC found ?



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12. What is UNEP agreement of 1987 ?



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Short Answer Question

1. What is a food chain ? Write the common food chain of a pond ecosystem .



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2. We should carry cloth bags every time we go to the market . Why ?



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3. What are the abiotic components in an ecosystem ?



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4. What are the differences between primary consumers and secondary consumers ?



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5. Why does a food chain always begin with producers ?



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6. What positions do producers, herbivores and carnivores occupy in a food chain ?



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7. What is ten per cent law of energy transfer ?



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8. How does the concentration of pesticides and fertilizers increase in the water bodies ?



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9. Why do we consider crop fields as artificial ecosystems ?



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10. Why can the pesticides not be removed from food grains by washing ?



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11. What are the effects of ozone-layer depletion on human beings ?



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12. Why is improper disposal of waste a curse to environment ?



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13. Suggest some measures to replace commonly used nonbiodegradable products with biodegradable ones.



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1. Differentiate between food chain and food web with one example.



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2. Define decomposers. Explain their role in an ecosystem.



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3. Why is the flow of energy unidirectional ?

Explain it with the 10% law of transfer of energy .



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4. Categorize some of your daily activities as ecofriendly. Suggest some more ecofriendly activities which we should adopt in day to day life.



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5. Discuss different biotic components and their importance in an ecosystem.



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6. Describe those agricultural practices which are harmful for environment .



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7. Divide the wastes generated from your house into biodegradable and nonbiodegradable categories and suggest methods for their disposal.



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8. How do industrial wastes affect our environment ?



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9. Discuss possible methods to manage garbage and sewage.



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Diagrammatic Questions

1. Draw diagrams to represent a common food chain in a grassland ecosystem .



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2. With the help of flow charts show a food web operating in an ecosystem.



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3. Drawn a diagram to represent pyramid of numbers in any ecosystem.



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4. With the help of diagrams explain how ozone layer gets depleted by CFC.



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5. Draw a pond ecosystem showing its different components .



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MCQ

1. An ecosystem consists of

A. nonliving things only

B. living organisms only

C. both living and nonliving things

D. water , gases and soil

Answer: C



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2. Chlorofluorocarbon (CFC) is mainly responsible for:

A. global warming

B. acid rain

C. biomagnification

D. ozone - layer depletion

Answer: D



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3. Which of the following effects on humans will be caused by excessive exposure to UV-rays ?

A. Skin cancer

B. Damage to immune system

C. Damage to heart and lungs

D. peptic ulcers

Answer: A::B



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4. Choose the correct statement (s)

A. Green plants convert solar energy into chemical energy.

B. Substances that are broken down by biological processes are nonbiodegradable.

C. DDT and plastic are nonbiodegradable.

D. producers synthesize food from inorganic compounds

Answer: A::C::D



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5. Which trophic level is occupied by carnivores in a food chain ?

A. First

B. Second

C. Third

D. Fourth

Answer: C



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6. If a frog eats a grasshopper, then the energy will be transferred from

A. consumer to producer

B. primary consumer to secondary consumer

C. secondary consumer to primary consumer

D. secondary consumer to tertiary consumer

Answer: B



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7. If 10 kilocalories of energy is available to snakes (fourth trophic level), what be the available energy at producer, level in the following food chain?

Grass → Grasshopper → Frog → Snake

A. 100 kilocalories

B. 1000 kilocalories

C. 1 kilocalory

D. 10,000 kilocalories

Answer: D



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8. A network of interconnected food chains is called

A. ecological pyramid

B. food web

C. ecosystem

D. trophic level

Answer: B::C::D



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9. Which of the following groups of organisms do not synthesize carbohydrates from solar energy and inorganic compounds ?

A. Producer

B. Herbivores

C. Consumers

D. decomposers

Answer: D



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10. Which of the following represents an artificial ecosystem ?

A. Forest

B. Grassland

C. Lake

D. Crop field

Answer: D



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11. Why should we not use plastic cups and plates ?

A. Because they are costly

B. Because they are biodegradable

C. Because they are very light

D. Because they are nonbiodegradable

Answer: C



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12. Which of the following groups of organisms convert organic materials to inorganic forms ?

A. Producers

B. Consumers

C. Decomposers

D. Green plants

Answer: C



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13. What will be the result if in the following food chain goat population is decreased considerably ? Green plant → goat → Lion

A. Green plants will die.

B. The population of lion will increase

C. The population of green plants will increase and the lion population will decrease.

D. Lion will start consuming green plants

Answer: C



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14. In which form is the 10% energy available for transfer from one trophic level to the next in an ecosystem?

- A. Light energy
- B. Mechanical energy
- C. Heat energy
- D. Chemical energy

Answer: D



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15. Why is the number of trophic levels limited in a food chain ?

A. Because there is increase in energy at each level.

B. Because there is successive decrease in energy at higher trophic levels.

C. Because trophic levels are connected

D. Because producers constitute first trophic level.

Answer: B



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16. What percentage of solar radiation is absorbed by all the green plants for photosynthesis ?

A. 0.001

B. 0.01

C. 0.1

D. 1

Answer: B



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17. In the following diagram which trophic level will have the maximum energy ?

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width="80%")>

A. T_1

B. T_2

C. T_3

D. T_4

Answer: A



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18. Omnivores are one type of

A. Producers

B. Consumers

C. decomposers

D. abiotic component

Answer: B



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19. Bacteria and fungi do not act as

A. producers

B. Consumers

C. autotrophs

D. decomposers

Answer: A::B::C



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20. The herbivores are not

A. Consumers

B. decomposes

C. producers

D. autotrophs

Answer: B::C::D



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21. Organisms which feed on dead plants and animals are called

A. consumers

B. producers

C. decomposers

D. heterotrophs

Answer: C



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Fill In The Blanks

1. Substance that are broken down by biological process are called___



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2. Gardens and ____are artificial ecosystems.



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3. ____ constitute the first trophic level.



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4. Autotrophs capture the energy present in sunlight and convert it into ____



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5. The flow of energy is ____



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6. Human beings occupy the____ position in any food chain.



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7. The ozone at the higher levels of atmosphere is a product of UV radiations acting on____ molecule.



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8. The various components of an ecosystem are___



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9. There is___of energy when we go from a trophic level to the next trophic level.



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10. Human activities have an impact on the ____





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11. a position in a food chain is called a _____



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12. A series of interconnected food chains representing the feeding relationship of the organisms within an ecosystem is called _____



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13. The top ____ is not killed and eaten by other animals of the ecosystem.



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14. In a grassland ecosystem a hawk represents the ____



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15. The substances formed in decomposition are released into the ____ and the ____



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16. ___ wastes can be broken down into simpler substances by decomposers.



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17. The ultimate source of energy in an ecosystem is the___



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18. Producers always contain ____ pigments .



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Yes No

1. Does an ecosystem consist of both biotic and abiotic components ?



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2. Do gardens represent artificial ecosystem ?



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3. Are living plants and animals decomposed by decomposers ?



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4. Are herbivores, carnivores and omnivores classifications of consumers ?



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5. Do autotrophs constitute the first trophic level in an ecosystem ?



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6. Are herbivores, the secondary consumers ?



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7. Can the flow of energy be bidirectional ?



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8. The green plants in a terrestrial ecosystem capture about 1% of the energy of sunlight .
Is it true ?



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9. Can we say that there is progressive increase in energy level in successive trophic levels ?



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10. Does the accumulation of nonbiodegradable pesticides in food chain result in biological magnification ?



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11. Is it true that ozone, the deadly poison it is , shields the surface of the earth from UV radiation ?



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12. Do carnivores that feed upon herbivores belong to the second trophic level ?



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1. Forests are artificial ecosystems.



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2. All animals which eat plants or other animals are consumers.



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3. The frog that eats the grasshopper is a secondary consumer.



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4. Decomposers are also called saprotrophs.



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5. Energy and materials are not transferred from one trophic level to another.



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6. DDT is a nonbiodegradable substance.



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7. Tertiary consumers form the fourth trophic level.



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8. Solar energy is converted into chemical energy by heterotrophs.



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9. Food chains generally consist of three of four steps.



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10. CFCs are used as refrigerants and in fire extinguishers.



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11. Aquarium cannot be treated as an ecosystem.



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12. All green and blue-green algae are producers.



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13. Sewage may be used to produce biogas.





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