



BIOLOGY

BOOKS - PEARSON IIT JEE

FOUNDATION

ECOLOGY

Test Your Concepts Fill In The Blanks

1. _____ is the study of interactions between organisms and their environment.



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2. The interlinking of various food chains in an ecosystem is known as _____



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3. The linear flow of energy between various components of the environment is known as _____



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4. Each step in a food chain represents



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5. _____ are primary consumers.



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6. A hole has been observed in the _____ layer of the stratosphere near Antarctica, this allows the UV rays to reach the Earth directly.



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7. Oxides of _____ and _____ lead to the formation of acid rain.



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8. Increase in the Earth's temperature is known as _____



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9. _____ gas is useful for photosynthesis.



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10. The contamination of environment by unwanted substances is known as _____



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11. The pollutants that are formed in the atmosphere by chemical reactions between primary pollutants and atmospheric constituents are known as _____



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12. More than 50 per cent of air pollution is caused by _____





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13. Change in the pattern of rainfall affects _____ production.



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14. The Earth absorbs the energy from the sun and gives out _____



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15. Controlling of water pollution due to the industrial wastes is done by establishing _____ plant in industries.



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Test Your Concepts For Choices Have Been Provided Select The Correct Alternatives

1. An ecosystem should have a continuous

A. inflow of energy from sun to the
producers

B. exchange of energy among various organisms in different trophic levels.

C. transfer of nutrients from one trophic level to another.

D. All the above

Answer: D



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2. What is the diagrammatic representation of the flow of energy from one trophic level to another known as?

- A. Food chain
- B. Food web
- C. Ecological pyramid
- D. Both (a) and (c)

Answer: C



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3. Which among the following ecosystems come under the category of micro ecosystems?

A. Rainforests

B. Ponds

C. Lakes

D. Deserts

Answer: B



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4. Identify the artificial ecosystem among the following?

A. Lakes

B. Ponds

C. Tundras

D. Zoos

Answer: D



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5. What are the main sources of water pollution?

A. Municipal sewage

B. Industrial waste

C. River water

D. Both (a) and (b)

Answer: D



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6. Identify the minerals that are found in runoff water?

A. Nitrogen and phosphorous

B. Nitrogen and carbon

C. Carbon and phosphorous

D. None of these

Answer: A



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7. Which of the following pollutants is not present in the smoke emitted from the vehicles?

A. Ammonia

B. Carbon monoxide

C. Lead

D. None of these

Answer: A



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8. Which of the following health problems occur due to the air pollution?

A. Bronchitis

B. Asthma

C. Jaundice

D. Both (a) and (b)

Answer: D



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9. Which among the following is not a green house gas?

A. Carbon dioxide

B. Oxygen

C. Methane

D. Chlorofluorocarbons

Answer: B



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10. Which of the following is a renewable source of energy?

A. Coal

B. Petroleum

C. Tide

D. Uranium

Answer: C



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Test Your Concepts

1. Match the entries of Column 1 with those of Column 2.

Column 1	Column 2
A. Biome	(i) Fresh water ecosystem
B. Micro ecosystem	(ii) Garden
C. Artificial ecosystem	(iii) Ecosystem under a rock
D. Aquatic ecosystem	(iv) Rain forest

A.

$$A \rightarrow (iv), B \rightarrow (iii), C \rightarrow (ii), D \rightarrow (i)$$

B.

$$A \rightarrow (i), B \rightarrow (ii), C \rightarrow (iii), D \rightarrow (iv)$$

C.

$$A \rightarrow (iv), B \rightarrow (ii), C \rightarrow (iii), D \rightarrow (i)$$

D.

$$A \rightarrow (iv), B \rightarrow (iii), C \rightarrow (i), D \rightarrow (ii)$$

Answer: A



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Mastering The Concepts Knowledge And Understanding

1. Differentiate between biotic and abiotic components.



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2. What is an ecosystem?



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3. How are ecosystems classified based upon their formation? Explain.



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4. Name the different types of ecosystems depending upon their size.



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5. What do you mean by ecotone?



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6. Define the following:

Autotrophs



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7. Define the following:

Decomposers



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8. Define the following:

Heterotrophs



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9. Construct the food web with the following living organisms.

(plant, cow, lion, hen, frog, snake, honey bee, hawk)



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10. Decomposers play a major role in the ecosystem. Explain.



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11. Does recycling process have any impact on environment? Justify your answer.



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12. Write a short note on the effect of human beings on ecosystem.



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13. Construct food web with the following organisms.

(carrots, grass, groundnuts, rabbit, deer, squirrel, fox snake, hawk)



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14. What is the difference between primary and secondary pollutants?



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15. Mention the factors of air pollutants that affect human body.



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16. How does agriculture lead to pollution? Explain.



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17. What are the various methods to control air pollution from industries?



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18. What is the role of citizens in controlling pollution?



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19. Give few examples of natural air pollution.



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20. What are the short-term and long-term effects of air pollution on human beings?



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21. Mention various man-made sources of water pollution.



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22. Name few inorganic water pollutants.



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23. Identify the layer of atmosphere responsible for all weather phenomena.



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24. How does CO harm us?



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25. Carbon dioxide is required for the sustenance of life, but it is considered as a pollutant. Justify your statement.



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26. What are the devices used in the industry for reducing suspended particulate matter?



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27. How do radioactive pollutants affect plants?



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28. How are oxides of nitrogen formed in the air naturally?



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29. As refrigerants, hydrochlorofluorocarbons and hydrofluorocarbons are preferred over CFCs. Give reason.



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30. What is the role of nitrogen monoxide in depletion of ozone layer?



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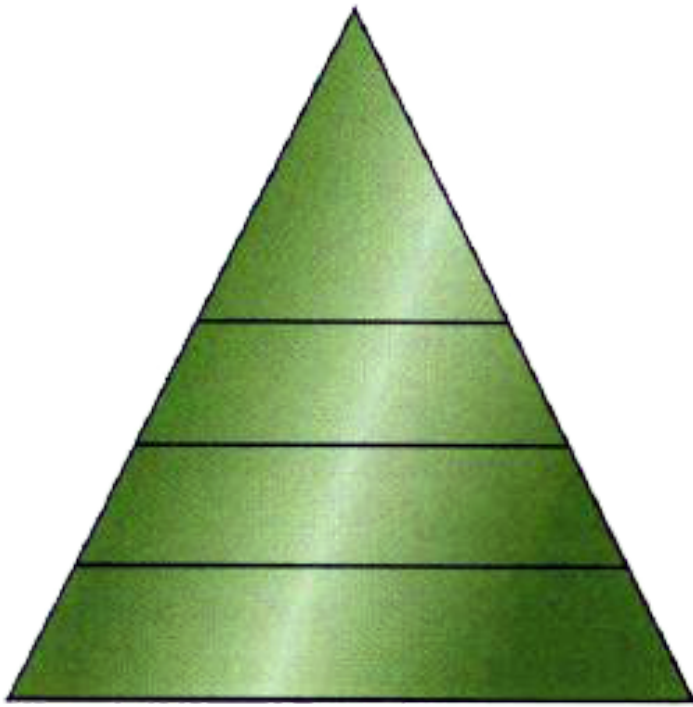
31. How can acid rain be neutralized?



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Mastering The Concepts Application And Analysis

1. Answer the following based on the given food web:

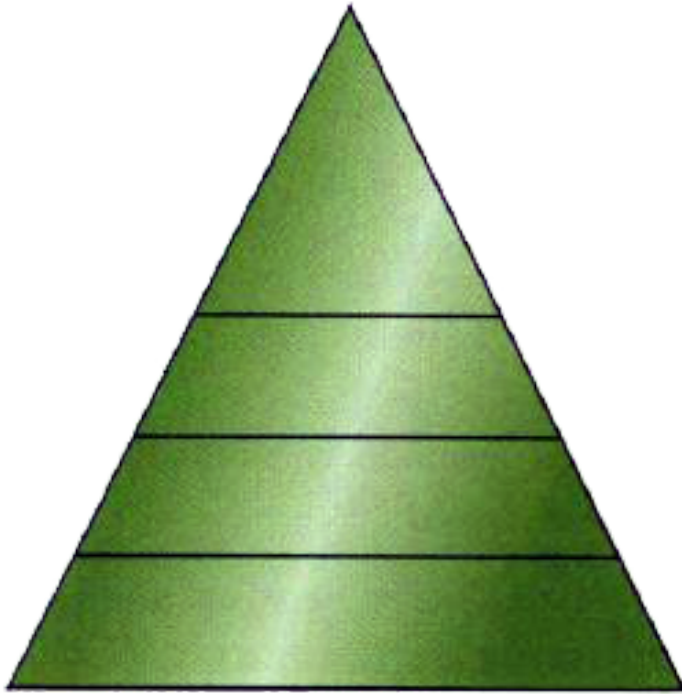


Name the producers in the food web shown in the figure.



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2. Answer the following based on the given food web:

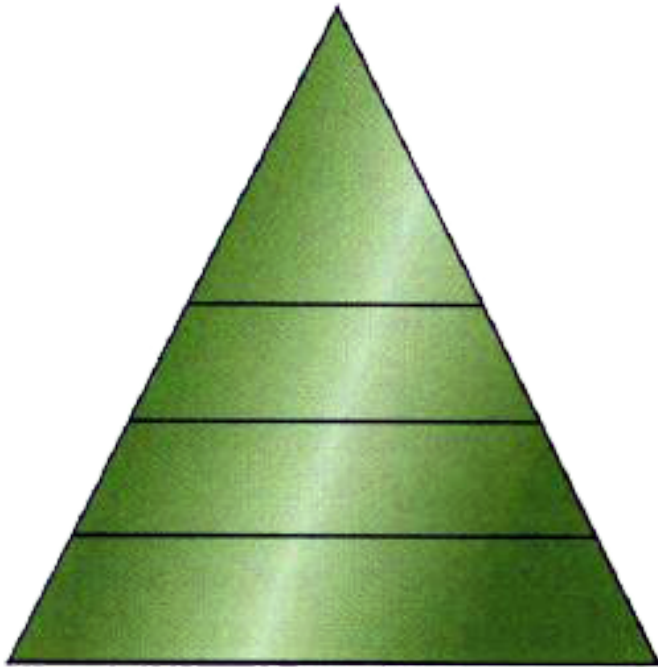


Name the primary consumers in the given food web.



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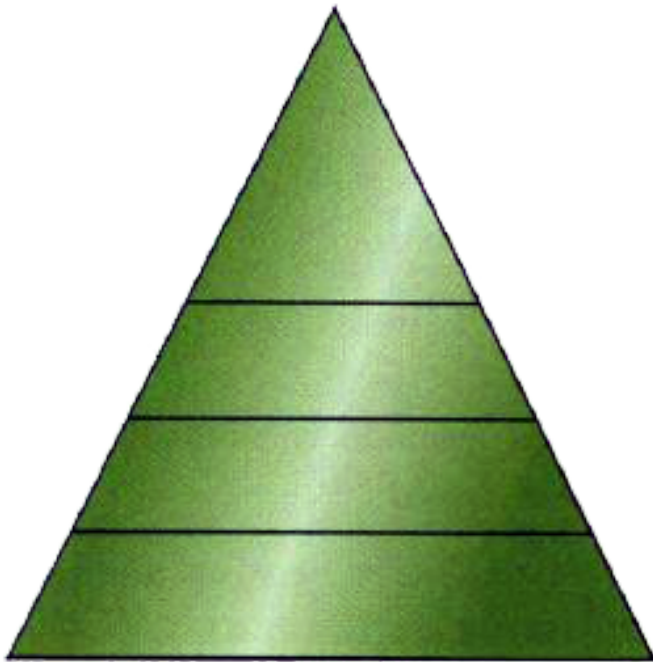
3. Answer the following based on the given food web:



Name the secondary consumers in the given food web.



4. Answer the following based on the given food web:

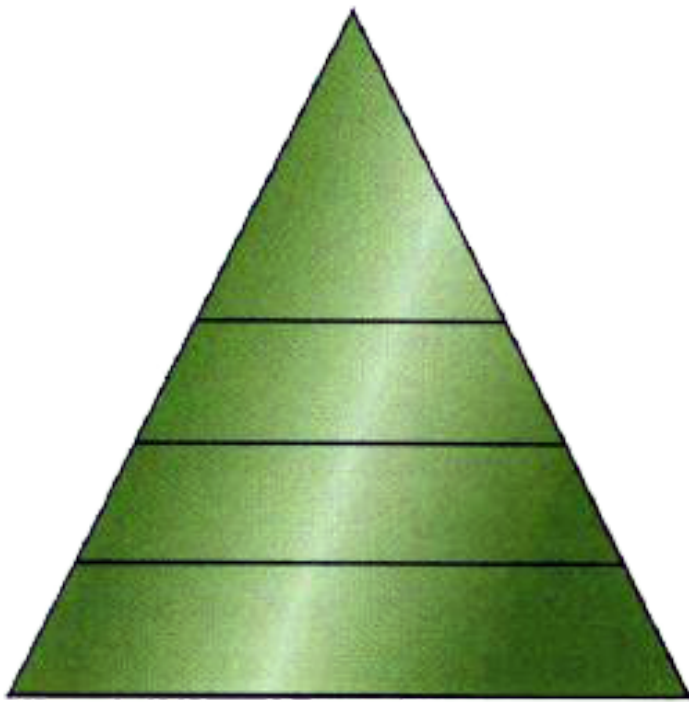


Name the organisms that share food with rabbit.



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5. Answer the following based on the given food web:

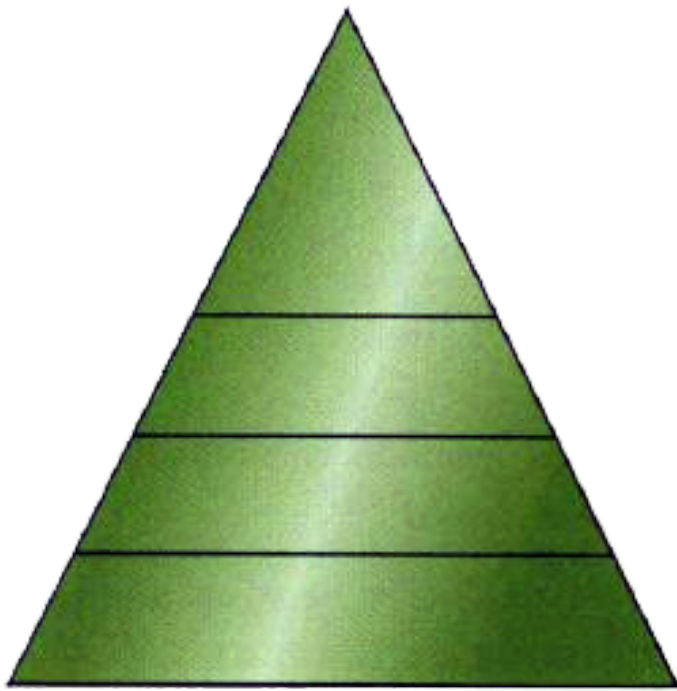


Where does the food web end?



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6. Answer the following based on the given food web:



Where does the food web start?



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7. What are the basic requirements for the survival of animals in the ecosystem? Explain.



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8. How do biomedical wastes affect our environment?



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9. Incineration of certain wastes leads to severe environmental pollution. Explain.



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10. How does radioactive pollution cause somatic variation?



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11. Why does acid rain corrode concrete structures?



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12. What is auditory fatigue? How does it occur?



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13. Use of manures may cause diseases, but com posted manure is safe to use. Give reason.



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Mastering The Concepts Assertion And Reasons

1. Assertion (A): Decomposers are the scavengers in the ecosystem.

Reason (R): A food chain starts with decomposers.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: C



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2. Assertion (A): Producers are known as autotrophs in the ecosystem.

Reason (R): Solar energy is the basic source of energy for all tropic levels.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: B



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3. Assertion (A): In any food chain, the number of organisms in any trophic level should always be less than that in its previous trophic

level.

Reason (R): Only 10 per cent of total energy present in a trophic level is transferred to the next trophic level in any food chain.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: A



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4. Assertion (A): Powdered limestone can be sprayed over areas which are prone to acid rain.

Reason (R): Major component of limestone is calcium carbonate.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: A



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5. Assertion (A): Ozone protects us from UV rays present in sun's radiation.

Reason (R): Ozone is a greenhouse gas

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: B



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6. Assertion (A): Electrostatic precipitator prevents air pollution.

Reason (R): Acidic gases like oxides of sulfur and nitrogen are neutralized in electrostatic precipitator.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: C



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7. Assertion (A): Concentration of toxic chemicals is maximum in producers.

Reason (R): Producers are directly in contact with the toxic chemicals present in the soil.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer: D



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Assessment Tests Fill In The Blanks

1. An ecosystem comprises a community of organisms together with their _____



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2. Broad categories of ecosystems are called _____



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3. In ecosystems _____ and _____ are conserved.



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4. Savannas and deserts are the examples of _____ ecosystems.



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5. Filters arrest _____ from the exhaust gases.



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6. Usage of _____ in refrigeration system leads to the ozone layer depletion.



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7. _____ radiation emitted by the Earth is absorbed by CO_2 , CH_4 and water vapors in the atmosphere and sent back toward the

earth surface as heat energy causing
Greenhouse effect



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8. Diseases, such as cholera, typhoid and
jaundice are _____ borne diseases



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**Assessment Tests Four Choices Have Been
Provided Select The Correct Alternatives**

1. Which of the following is not an abiotic component of an ecosystem?

A. Sunlight

B. Air

C. Temperature

D. Decomposers

Answer: D



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2. Which of the following is not a functional aspect of an ecosystem?

- A. Productivity
- B. Nutrient cycle
- C. Energy flow
- D. None of these

Answer: A



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3. Ozone layer is found in :

A. Stratosphere

B. Troposphere

C. Thermosphere

D. Mesosphere

Answer: A



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4. Which of the following is not a water pollutant ?

A. Fine sand

B. Algae

C. Fertilizers

D. CFCs

Answer: D



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5. Which among the following is a non-biodegradable waste?

A. Peels of vegetables

B. Rubber (Organic)

C. Plastic

D. Excreta of animals

Answer: C



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Assessment Tests

1. Write the missing correlated terms.

Electrostatic precipitators: Air pollution ::

Sewage treatment: _____



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2. Write the missing correlated terms.

Carbon dioxide : _____ :: CFCs : Ozone depletion.



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3. Write the missing correlated terms.

Desert : Terrestrial ecosystem:: Fresh water

Lake: _____



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**Assessment Tests Answer The Following
Questions**

1. Define the term biomass.



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2. Define the following:

Ecosystem



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3. Define the following:

Food web



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4. Define the following:

Bio-accumulation



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5. Write a short note on energy flow in an ecosystem



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6. What is acid rain?



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7. What are the various effects of noise pollution on human beings?



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8. What is greenhouse effect?



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9. Mention one main cause for greenhouse effect.



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10. What is a greenhouse gas?



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11. What are the three main greenhouse gases?



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12. Is greenhouse effect necessary for life? If so, give reason.



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13. What is ozone layer depletion? What are the causes and effects of it?



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14. What is eutrophication?



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15. How do pollutants released from the automobiles affect the environment?



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16. How can the pollution due to transportation be reduced ?





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17. How does household detergents and sewage lead to water pollution?



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18. Explain thermal pollution and its effect on aquatic life .



[Watch Video Solution](#)

19. What are the effects of water pollution on human being?



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20. Mention the gases other than chlorofluorocarbons that cause ozone depletion .



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21. How does acid rain affect human beings and plants?



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22. How can an individual contribute to reduction in ozone depletion?



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Quick Recap

1. Differentiate between food chain and food web.



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2. How do CFCs deplete ozone layer?



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3. How does eutrophication affect natural ecosystem?



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