



## BIOLOGY

### BOOKS - SRIJAN BIOLOGY (ENGLISH)

#### ECOSYSTEMS

#### Illustrative Questions

1. Why do some deep seas have more oxygen than surface water?



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2. Why are plants (producers) in ecosystem also known as 'Energy transducers'?



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3. Why is low temperature helpful for the periodic exposure of plants?

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4. Why are plants considered the basis of biotic existence?

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5. Why are sedimentary biogeocycles are less perfect?

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6. Who proposed generalised or universal model of Y-shaped energy flow? Why is it called universal model?

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7. In a food chain members of successive higher trophic level are fewer in number, why?

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8. Why are polar bears larger than black bears?

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9. Why are pines growing near tip of mountain called 'Flag trees'?

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**10.** How are nutrients retained in the ecosystem? What is this process called?

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**11.** Construct an ideal pyramid of energy when 1,000,000 joules of sunlight is available. Label all its trophic levels.

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**12.** Construct a pyramid of biomass starting with phytoplankton. Label trophic levels. Is the pyramid upright or inverted? Why?

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**13. Give a reason**

Climax stage is achieved quickly in secondary succession as compared to primary succession.

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**14. Why is the rate of assimilation of energy at the herbivore level called secondary productivity?**

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**15. Why are nutrient cycles in nature called biogeochemical cycles?**

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**16. Define self-sustainability.**



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**17.** Organisms at a higher trophic level have less energy available.

Comment.

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**18.** The number of trophic levels in an ecosystem are limited.

Comment.

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**19.** Is an aquarium a complete ecosystem?

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**20.** What could be the reason for the faster rate of decomposition in the tropics?

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**21.** Apart from plants and animals, microbes form a permanent biotic component in an ecosystem. While plants have been referred to as autotrophs and animals as heterotrophs, what are microbes referred to as? How do the microbes fulfil their energy requirements?

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**22.** Poaching of tiger is a burning issue in today's world. What implication would this activity have on the functioning of the ecosystem of which the tigers are an integral part?

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**23.** In relation to energy transfer in ecosystem, explain the statement "10 kg of deer's meat is equivalent to 1 kg of lion's flesh"

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**24.** Sometimes due to biotic/abiotic factor the climax remain in a particular seral stage (pre climax) without reaching climax. Do you agree with this statement. If yes give a suitable example.

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**25.** The rate of decomposition of detritus is affected by the abiotic factors like availability of oxygen, pH of the soil substratum, temperature, etc. Discuss.



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**26.** What will happen to an ecosystem if:

- (a) All producers are removed,
- (b) All organisms of herbivore level are eliminated, and
- (c) All top carnivore population is removed.

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**27.** Why is water of oceans salty?

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**28.** Why is term 'Cycle' used for the movement of matter and 'flow' for the movement of energy?

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**29.** Animals are not essential in an ecosystem. Why?



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**30.** Why is deep sea considered an incomplete ecosystem?



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**31.** A smaller food chain is said to be more efficient than a larger one. Why?



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**32.** Why are phytoplanktons more important in pond ecosystem than larger plants?



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33. Why are food chains short or trophic levels few in an ecosystem?



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34. Why is productivity of Tundra biome very low?



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## Practice Questions Very Short Answer Type Questions

1. Name the three major biotic components of ecosystem.



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2. Name two types of producers.



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3. Name four types of ecosystems.



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4. What comprise the edaphic factors?



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5. How is solar energy introduced in the biosphere?



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6. Name two abiotic factors.

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7. Name the form by which energy enters living system and leaves the system.

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8. Define the term 'food'.

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9. Name two components of an ecosystem.

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10. Give one common example of food chain.

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11. What are trophic levels?

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12. Name two types of biogeochemical cycles.

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13. What are main sources of carbon in nature?

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14. Which is used again and again in the biosphere, matter or energy?

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15. Which biogeochemical cycle is fully balanced?

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16. Which are more numerous, secondary consumers or tertiary consumers?

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17. What are detritivores?

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**18.** The source of energy in an ecosystem is

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**19.** Give an alternative term for ecological pyramids.

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**20.** Suggest the alternative term for biosphere.

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**21.** How much time is taken for a primary succession to complete?

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22. What are dominant species?



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23. How deep in the sea are producers present?



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24. Name the dominant producers in a deep aquatic system. What other name could you give to a primary consumer?



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## Practice Questions Short Answer Type I Questions

1. How is energy related to biomass?



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2. What is the role of decay in biosphere?



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3. Energy flow in an ecosystem is



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4. Why do ultraviolet rays and infrared rays reach the earth's surface in very small amounts?



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5. Name the factors affecting the rate of decomposition.



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6. What is primary productivity? In what units would you express productivity?



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7. Why is the length of food chain in an ecosystem generally limited to 3-4 trophic levels.



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8. The temperate regions show a lower value of primary productivity as compared to tropical regions.



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9. What would happen to successive trophic levels in the pyramid of energy if the rate of reproduction of phytoplanktons was slowed down? Suggest two factors which could cause such a reduction in phytoplankton reproduction.

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### Practice Questions Short Answer Type II Questions

1. Distinguish between first order consumers and second order consumers.

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2. Explain the oxygen cycle in nature.

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3. What is pyramid of energy? What are its characteristics?

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4. Give a graphic representation of phosphorus cycle in nature.

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5. Write a note on pyramid of numbers.

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6. Briefly enumerate the various types of ecological efficiencies.

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7. What is 10% law? Describe it in relation to transfer of energy in an ecosystem.

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8. Discuss briefly the abiotic components of an ecosystem.

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9. Describe pond as an ecosystem.

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10. Write a short note on trophic levels.

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**11.** Define the pyramid of biomass.

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**12.** Describe the structural features of an ecosystem.

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**13.** What is meant by ecological succession ? Explain how it occurs .  
What properties distinguish a pioneer community from a climax community ?

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**14.** Explain Serarch succession, highlighting the seral communities.



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15. Explain with the help of two examples, how the pyramid of numbers and the pyramid of biomass can look inverted.



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16. Give differences between seral and climax community during succession.



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17. Briefly describe the processes and products of decomposition.



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**18.** What is nutrient cycling? Write its significance.

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**19.** Explain the meaning of 10% law.

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**20.** What is the difference between a grazing food chain and a detritus food chain?

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**21.** Outline salient features of carbon cycling in an ecosystem.

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## Practice Questions Long Answer Type Questions

1. Define an ecosystem. Give a few examples of ecosystem.

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2. Name the three types of biotic components of an ecosystem and mention the role they.

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3. Describe a man-made ecosystem. Why are such ecosystems more efficient.

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4. Make a food web of any ecosystem. Why is the concept of a food web more realistic in nature than that of a food chain?

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5. What is a biogeochemical cycle? Enumerate and describe any one of them with the help of a suitable diagram.

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6. What is meant by a sedimentary cycle? Depict diagrammatically the phosphorus cycle.

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7. Enumerate different factors which constitute physical environment.

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8. Describe the various kinds of food chains in a food web.

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9. All the solar energy trapped by green plants ultimately returns to the environment'. Comment on this statement.

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10. What is meant by ecological succession ? Explain how it occurs .  
What properties distinguish a pioneer community from a climax

community ?



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**11.** What is primary productivity? Give the range of primary productivity in different ecosystems of the world.



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**12.** What is ecological succession on bare rock called? Name the first and the last but one succession stage in it. Explain how the climax community gets established in this succession.



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**13.** How does succession differ in terrestrial and aquatic systems? Give salient points.



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## Previous Years S Board Paper Questions Very Short Answer Type Questions

1. Which organisms constitute the last trophic level ?



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2. Define the following:

PAR



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3. Answer the following questions briefly and to the point:

What do detritus food chains begin with?

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4. Give a reason

Climax stage is achieved quickly in secondary succession as compared to primary succession.

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5. State what does 'standing crop' of a trophic level represent.

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[Previous Years S Board Paper Questions Long Answer Type Questions](#)

1. Give a graphic representation of carbon cycle in nature.

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2. Give a graphic representation of phosphorus cycle in nature.

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## Review Questions

1. Give one significant difference between each of the following :

(i) Natural and Artificial ecosystems .

(ii) Biotic and Abiotic components .

(iii) Primary productivity and Secondary productivity .

(iv) Detritus and Litter .

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2. Maximum biomass of autotrophs in oceans is formed by



- A. Benthic brown algae , coastal red algae and daphnids .
- B. Sea grass and slime
- C. Free floating micro algae , cyanobacteria and nanoplanktons
- D. Benthic diatoms

**Answer:**

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**3.** Best type of pyramid which is always true is .

- A. Pyramid of energy
- B. Pyramid of biomass
- C. Pyramid of number
- D. Both (a) and (c)

**Answer:**



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**4. An ecosystem is**

- A. Open
- B. Close
- C. Both open and close
- D. Neither open nor closed

**Answer:**



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**5. Mention one significant function of the following:**

- A. Photoautotrophs
- B. Carnivorous animals
- C. Decomposers
- D. Scavengers

**Answer:**



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**6. State the best known contribution of:**

- A. Karl Mobius
- B. Eton
- C. Lindermann
- D. EP Odum

**Answer:**

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7. Expand the following :

A. PAR

B. NPP

C. GPP

D. SP

**Answer:**

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8. Briefly describe the process and products of decomposition .



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9. What is primary productivity ? Giv a brief description of factors that affect primary productivity .

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10. What is meant by ecological succession ? Explain how it occurs .  
What properties distinguish a pioneer community from a climax community ?

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## Competition Corner Objective Type Questions

1. Organisms living in open sea are called

A. Planktons

B. Nektons

C. Pelagic

D. Benthos

**Answer: A**



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**2. Pond is defined as a**

A. Biome

B. Agroecosystems

C. Natural ecosystem

D. Community

**Answer: C**



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**3. Which one of the following shows detritus food chain?**

A. Organic waste → Bacteria → Molluscs

B. Grass → Insects → Snakes

C. Plankton → Small fishes → Large fishes

D. All of the above

**Answer: A**



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4. The kinetic energy of 1 g molecule of a gas, at normal temperature and pressure, is

- A. Enthalpy
- B. Activation energy
- C. Spontaneous energy
- D. Free energy

**Answer: D**

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5. Match the column I (Indian forest types) with column II (dominant tree genera) and choose the correct option.



| Column I                       | Column II         |
|--------------------------------|-------------------|
| A. Tropical rainforest         | 1. <i>Hopea</i>   |
| B. Tropical deciduous forest   | 2. <i>Shorea</i>  |
| C. Temperate broad leaf forest | 3. <i>Quercus</i> |
| D. Temperate coniferous forest | 4. <i>Picea</i>   |

- A. A B C D  
1 2 3 4
- B. A B C D  
2 1 4 3
- C. A B C D  
3 2 1 3
- D. A B C D  
4 3 2 1

**Answer: A**

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6. The average trophic efficiency of transfer of energy from one trophic level to the higher trophic level is called.

- A. Assimilation efficiency
- B. Exploitation efficiency
- C. Lindermann's trophic efficiency rule
- D. Gross primary production

**Answer: C**



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7. Which of the following organisms form the decomposers?

- A. Pteris
- B. Bacteria
- C. Saprophytic fungi
- D. Both (b) and (c)

**Answer: D**

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**8.** A man-made ecosystem is

- A. Less in diversity
- B. More in diversity
- C. Man does not make ecosystem
- D. More stable than natural ecosystem

**Answer: A**

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9. At which latitude, heat gain through insolation approximately equals heat loss through terrestrial radiation?

- A.  $66^\circ$  North and South
- B.  $22\frac{1}{2}^\circ$  North and South
- C.  $40^\circ$  North and South
- D.  $42\frac{1}{2}^\circ$  North and South

**Answer: C**



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10. Which of the following helps in the growth of terrestrial pteridophytes in tropical rain forest?

- A. Microclimate

B.  $C_4$  pathway

C. Eutrophication

D. Biological magnification

**Answer: A**



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**11. Stability of ecosystem depends upon**

A. Primary productivity

B. Interchange between producers and consumers

C. Number of producers

D. Number of consumers

**Answer: B**



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12. Extinction of a species in a food chain is compensated by

- A. Food chain
- B. Ecological pyramid
- C. Food web
- D. None of these

**Answer: C**

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13. Pyramid of energy in aquatic ecosystem is

- A. Always upright
- B. Always inverted

C. Bell-shaped

D. None of these

**Answer: A**



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**14.** Decomposition of organic matter is brought about by

A. Protozoa

B. Plants

C. Microorganisms

D. None of these

**Answer: C**



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**15.** Halophytes are

- A. Fire-resistant
- B. Cold-resistant
- C. Salt-resistant
- D. Sand-loving

**Answer: C**



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**16.** The final stable community in ecological succession is

- A. Pioneers
- B. Sere
- C. Climax



D. Carnivores

**Answer: C**

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17. In plant succession, when climax community is reached, the net productivity

- A. Continues to increase
- B. Becomes zero
- C. Becomes reduced
- D. Becomes stable

**Answer: D**

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18. Which one of the following types of organisms occupy more than one trophic level in a pond ecosystem?

A. Phytoplankton

B. Fish

C. Zooplankton

D. Frog

**Answer: B**



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19. The correct sequence of plants in a hydrosere is

A. Oak Lantana → Scirpus → Pistia Hydrilla → Volvox

B. Volvox → Hydrilla → Pistia → Scirpus → Lantana →

Oak

C. Pistia → Volvox → Scirpus → Hydrilla → Oak →

Lantana

D. Oak → Lantana → Volvox → Hydrilla → Pistia →

Scirpus

**Answer: B**



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**20.** Energy flow in an ecosystem is

A. Unidirectional

B. Bidirectional

C. Multidirectional

D. All of these

**Answer: A**



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21. If a single plant species is removed from a food web, then most likely

- A. An animal species will fill the unoccupied niche
- B. Other plants will produce enough food for herbivores
- C. Dependent herbivores will have to find new food sources
- D. Carnivores will be unaffected by the loss

**Answer: C**



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22. The pyramid of energy is always

- A. Opaque
- B. Horizontal
- C. Upright
- D. Inverted

**Answer: C**

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23. The transition zone between the two vegetations of ecosystem is called

- A. Ecotone
- B. Ecocline

C. Ecosystem

D. Ecesis

**Answer: A**

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**24.** Energy enters the ecosystem through

A. Herbivore

B. Carnivore

C. Producer

D. Decomposer

**Answer: C**

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25. Which type of the following pyramids are never inverted ?

A. Energy

B. Mass

C. Number

D. Size

**Answer: A**



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26. Two species occupying same or overlapping area are called

A. Sympatric

B. Allopatric

C. Parapatric

D. Ring species

**Answer: A**

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27. Maximum net productivity in the terrestrial ecosystem is in

- A. Rain forest
- B. Deciduous forest
- C. Mangrove plantation
- D. Both (a) and (b)

**Answer: A**

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**28.** Deserts, grasslands, forests and tundra are the examples of

- A. Biomes
- B. Biogeographical regions
- C. Ecosystems
- D. Biospheres

**Answer: A**

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**29.** Niche is defined as the

- A. Position of species in a community in relation to other species
- B. Place where organism lives

C. Place where organism lives and performs its duty

D. Place where population perform their duties

**Answer: C**



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**30.** In an aquatic ecosystem, the organism present at the trophic level equivalent to cows in grasslands is

A. Phytoplankton

B. Zooplankton

C. Nekton

D. Place where population perform their duties

**Answer: B**



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31. Which one of the following is commonly found in temperate coniferous forests

- A. Quercus
- B. Dipterocarpus
- C. Shorea robusta
- D. Pinus wallichiana

**Answer: D**

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32. Evolution of different species in a given area starting from a point and spreading to other geographical areas is known as

- A. Ecotype

B. Biome

C. Ecosystem

D. Population

**Answer: A**



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**33.** Ecological efficiency is

A.  $\frac{\text{Gross primary productivity}}{\text{Incident total solar radiation}} \times 100$

B.  $\frac{\text{Food energy assimilated}}{\text{Food energy ingested}} \times 100$

C.  $\frac{\text{Net primary productivity}}{\text{Gross primary productivity}} \times 100$

D.

$$\frac{\text{Energy in biomass production at a trophic level}}{\text{Energy in biomass production at previous trophic level}} \times 100$$

**Answer: D**



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**34.** Which one of the following is not used for construction of ecological pyramids ?

- A. Dry weight
- B. Number of individuals
- C. Rate of energy flow
- D. Fresh weight

**Answer: D**



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35. Which of the following is an example of man-made ecosystem?

- A. Herbarium
- B. Aquarium
- C. Tissue culture
- D. Forest

**Answer: B**

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36. Trophic levels in ecosystem is formed by

- A. Only bacteria
- B. Only plants
- C. Only herbivores

D. Organisms linked in food chain

**Answer: D**

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**37.** Identify the following food chain: Dead animal Blow fly maggots

→ Common Frog → Snake

- A. Grazing food chain
- B. Detrital food chain
- C. Decomposer food chain
- D. Predator food chain

**Answer: B**

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**38.** Study the four statements given below and select the two correct ones out of them.

(i) A lion eating a deer and a sparrow feeding on grain are ecologically similar in being consumers.

(ii) Predator star fish *Pisaster* helps in maintaining species diversity of some invertebrates .

(iii) Predators ultimately lead to the extinction of prey species.

(iv) Production of chemicals such as nicotine, strychnine by the plants are metabolic disorders.

A. II and III

B. III and IV

C. I and IV

D. I and II

**Answer: D**



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39. The biomass available for consumption by the herbivores and the decomposers is called

- A. Net primary productivity
- B. Secondary productivity
- C. Standing crop
- D. Gross primary productivity

**Answer: A**

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40. Which of the following is false?

- A. Quantity of biomass in a trophic level at a particular period is called standing crop.
- B. The energy content in a trophic level is determined by considering individuals of a species in that trophic level.
- C. The succession that occurs in newly cooled lava is called primary succession.
- D. Rate of succession is faster in secondary succession.

**Answer: B**

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**41.** Transition zone between two ecosystems is

- A. Ecotype
- B. Niche

C. Ecotone

D. Biome

**Answer: B**



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**42.** Which one of the following elements in plants is not remobilised?

A. Phosphorus

B. Calcium

C. Potassium

D. Sulphur

**Answer: B**



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43. Which one of the following statements for pyramid of energy is incorrect, whereas the remaining three are correct?

- A. Its base is broad.
- B. It shows energy content of different trophic level organisms.
- C. It is inverted in shape.
- D. It is upright in shape.

**Answer: C**

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44. Vertical distribution of different species occupying different levels in a biotic community is known as

- A. Divergence

B. Stratification

C. Zonation

D. Pyramid

**Answer: B**



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**45. Secondary succession takes place on/in**

A. Bare rock

B. Degraded forest

C. Newly created pond

D. Newly cooled lava

**Answer: B**



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**46.** The mass of living material at a trophic level at a particular time is called

- A. Gross primary productivity
- B. Standing state
- C. Net primary productivity
- D. Standing crop

**Answer: D**



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**47.** In an ecosystem the rate of production of organic matter during photosynthesis is termed as

- A. Net primary productivity
- B. Gross primary productivity
- C. Secondary productivity
- D. Net productivity

**Answer: B**



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**48.** Most animals are tree dwellers in a

- A. Coniferous forest
- B. Thorn woodland
- C. Temperate deciduous forest
- D. Tropical rain forest

**Answer: D**



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**49.** Which of the following would appear as the pioneer organisms on bare rocks?

- A. Mosses
- B. Green algae
- C. Lichens
- D. Liverworts

**Answer: C**



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50. Which of the following is a characteristic feature of cropland ecosystem

- A. Absence of weeds
- B. Ecological succession
- C. Absence of soil organisms
- D. Least genetic diversity

**Answer: D**



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51. The term ecosystem was coined by

- A. E. Haeckel
- B. E. Warming

C. E.P. Odum

D. A.G. Tansley

**Answer: D**



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## Competition Corner Assertion And Reason Type Questions For Aims Aspirants

1. Assertion: Herbivore productivity is approximately 10% of gross productivity of producers.

Reason: Herbivores eat less and waste a lot of food energy.

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .
- C. If Assertion is true the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: C**

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2. Assertion: Producers provide food to all organisms.

Reason : They have a mechanism to synthesize glucose from  $CO_2$  and  $H_2O$  .

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .

C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: A**



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**3. Assertion :** Decomposers cannot be excluded from the food chains .

**Reason :** They act all all trophic levels of a food chain .

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .

C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: A**

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4. Assertion : Biogeochemicals pass between nonliving and living components of biosphere in a cyclic manner .

Reason : Biogeochemical are likely to exhaust one day.

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .
- C. If Assertion is true the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: C**

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**5. Assertion :** Oceans act as the global "sink" for  $CO_2$  .

**Reason :** Human activities are increasing  $CO_2$  concentration in the air.

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .

C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: B**



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6. Assertion : Productivity generally increases from polar regions towards the tropics .

Reason : It is due to increasing sunlight and temperature towards the tropics .

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .
- C. If Assertion is true the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: A**

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7. Assertion : Minerals have sedimentary cycle .

Reason : Their reservoir is in the earth's sediment .

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.
- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .



C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: A**



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**8.** Assertion : Mosses squeeze out the lichens in primary ecological succession .

Reason : Being taller and gregarious , the mosses kill the lichens with their shade .

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .

C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: A**

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**9.** Assertion : Ecological succession can turn a lake into a dryland forest with time .

Reason : A bare rock can become a forest through ecological succession .

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .

C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: B**



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**10. [A] :** Lichens are pioneer community in the temperate region.

**[R] :** Blue green algae grows as pioneer community in tropical region.

A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.

B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .

C. If Assertion is true the Reason is false .

D. If both Assertion and Reason are false .

**Answer: B**

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11. [A] : Energy pyramid is sloping .

[R] : The energy of one trophic level is lower than another level as we go up .

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.
- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .
- C. If Assertion is true the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: A**



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**12. [A] :** In a food chain , membrane of successive higher levels are fewer in number .

**[R] :** Number of organisms at any trophic level depends upon the availability of organisms which serve as food at the lower level .

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.
- B. If both Assertion and Reason are true and the Reason is not the corret explanation of the Assertion .
- C. If Assertion is ture the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: B**



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**13.** Assertion : A network of food chains existing together in an ecosystem is known as a food web.

Reason : An animal like kite cannot be a part of a food web.

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.
- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .
- C. If Assertion is true the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: C**



**14.** Assertion : True xerophytes store water in the form of mucilage which helps to withstand prolonged period of drought .

Reason : Vascular and mechanical tissue are well - developed in true xerophytes .

- A. If both Assertion and Reason are true and the Reason is the correct explanation for the Assertion.
- B. If both Assertion and Reason are true and the Reason is not the correct explanation of the Assertion .
- C. If Assertion is true the Reason is false .
- D. If both Assertion and Reason are false .

**Answer: D**

