



BIOLOGY

BOOKS - MODERN PUBLISHERS BIOLOGY (HINGLISH)

ECOSYSTEM

Practice Problems Ecosystem Structure And Function

1. Name two types of components of ecosystem.



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2. Who gave the term ecosystem ?



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3. Who called the ecosystem as biogeocoenosis ?



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4. Name three functional kingdoms of an ecosystem.



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5. What are the abiotic components of an ecosystem .



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6. Why are the producers called transducers ?

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7. Name some primary consumers of an aquatic ecosystem.

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8. What is significance of decomposers in an ecosystem.





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9. Define stratification.



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10. Name different strata in an aquatic ecosystem.



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11. Give the significance of stratification.



[Watch Video Solution](#)

12. Why are the tropical rain forests most productive ?



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13. Give another term for apparent photosynthesis.



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14. What is the basic requirement of an ecosystem to function and sustain ?



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15. Name the factors which affect the primary productivity .

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16. List the important structural characteristics of an ecosystem.

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17. What are various steps of decomposition process ?

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18. Give the significance of decomposition.



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19. Which factors determine the rate of decomposition ?



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20. Give the term for the organic matter in the initial stage of decomposition.



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21. Give a classic example of ecosystem.



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22. Name some primary consumers of a pond ecosystem.



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23. List two types of decomposers.



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24. What are anthropogenic ecosystem ?



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25. Define microphytes.



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Practice Problems Ecosystem Characteristics Of Ecosystem

1. Name a classic example of an ecosystem.



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2. What is trophic level ?

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3. What type of organisms belong to T_1 and T_2 trophic levels of food chain ?

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4. Give the term for a series of trophic levels showing repeated eating.

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5. What is the primary source of energy in a detritus food chain ?

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6. Give the term for the network of interconnected food chains.

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7. What is the significance of a food web ?

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8. What is energy conserving efficiency of modern crop systems ?

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9. Show the relationship between gross primary productivity and net primary productivity .

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10. Define bioenergetics.

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11. Who proposed the ecological pyramids ?



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12. Which ecological pyramid is always straight ?



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13. Define biomass.



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14. What do you mean by cohabitation ?

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15. Define an ecological niche.

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16. What is the significance of ecological niche ?

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17. What is 10 per cent law ?



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18. Who proposed 10 per cent law ?



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19. Who gave the term ecological niche ?



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20. Define ecological efficiency.



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Practice Problems Characteristics Of Ecosystem

1. What is pioneer community ?



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2. Define 'sere' .



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3. What is autogenic succession ?



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4. What is heterotrophic succession ?



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5. How much time taken to form climax community in grassland and forest.



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6. Define hydrosere.



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7. Give some examples of rooted floating stage.



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8. What is crustose lichens stage ?



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9. Give alternative name for reed swamp stage.



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10. Write one important characteristic of ecological succession.

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11. What is psammosere ?

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12. What is halosere ?

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13. Give the term for last and stable community of area.

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14. List the various communities of xerosere (lithosere)

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Practice Problems Ecosystem Biosphere

1. Define biosphere.

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2. What are three components of the biosphere?

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3. What is the extent of the biosphere?

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4. List two basic requirements for the survival of life in the biosphere.

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5. Why is earth called closed system with reference to materials ?



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6. What are biogeochemical cycles ?



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7. Name two types of biogeochemical cycles ?



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8. Why is phosphorus cycle called an imperfect cycle ?



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9. What is global sink of CO_2 ?



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10. Why are carbon and nitrogen cycles called gaseous cycles ?



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11. At which rate , CO_2 , is being utilized in photosynthesis by the producers ?

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12. What is nitrification ?

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13. Name two denitrifying bacteria.

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14. Name two symbiotic N_2 - fixing bacteria.



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15. Name two free living N_2 - fixing bacteria.



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16. What is significance of phytoagglutinin ?



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17. Which enzyme is involved in N_1 fixation ?



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18. Explain the 10% law.



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19. Who proposed the 10% law ?



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20. What are greenhouse gases ? Name two GHGs.



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21. Define biome.



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22. Give the term for the transitional zone between the adjacent biomes.



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23. Name the main longitudinal biomes.



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24. Which biome is characterized by permafrost ?



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25. Where are Taiga found in India ?



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26. Where are tropical rain forests found in India ?



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27. Give the productivity of tropical rain forests.



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28. Give the distribution of kangaroos in Australia.



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29. Name the grain - producing and cattle - raising areas.



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30. Name the temperate grasslands of Canada and South America.



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31. Name the deserts of India and Africa.



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32. What is alpine tundra ?



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33. Give the term for the basal region of a tropical mountain range in India.



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34. Which sea has maximum salt concentration ?



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35. What is shape of a marine ecosystem ?



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36. What is continental shelf ?



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37. Name the three types of organisms found in a marine ecosystem.

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38. What is abyssal zone in a marine ecosystem ?

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39. Name the most productive and most diverse part of coastal region.

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40. Give the term for the stagnant inland water bodies.



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41. Which ecosystems are called backbone of entire civilization ?



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42. What are cryophytes ?



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43. What is timber line ?



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44. Give the term for the study of fresh water bodies.



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45. Which forests are also called monsoon forests ?



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Ncert File Solved Ncert Exercise Questions

1. Fill in the blanks :

Plants are called asbecause they can fix carbon dioxide .

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2. Fill in the blanks :

In ecosystem dominated by trees, the pyramid (of number) istype .

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3. Fill in the blanks :

In aquatic ecosystems, the limiting factor for the productivity is

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4. Fill in the blanks :

Common detritivores in our ecosystem are

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5. Fill in the blanks :

The major reservoir of carbon on Earth is

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6. Which one of the following has the largest population in a food chain ?

- A. Producers
- B. Primary consumers
- C. Secondary consumers
- D. Decomposers

Answer: D

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7. Second most important trophic level in a lake is

A. Phytoplanktons

B. Zooplanktons

C. Benthos

D. Fishes

Answer: B



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8. Secondary producers are :

A. Herbivores

B. Producers

C. Carnivores

D. None of the above

Answer: A



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9. Percentage of photosynthetically active radiation (PAR) in the incident solar radiation is

A. 100 %

B. 50 %

C. 1 – 5 %

D. 2 – 10 %

Answer: D



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10. Distinguish between

- (a) Grazing food chain and detritus food chain
- (b) Production and decomposition
- (c) Upright and inverted pyramid
- (d) Food chain and Food web
- (e) Litter and detritus
- (f) Primary and secondary productivity .



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11. Describe the components of an ecosystem.



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12. Define ecological pyramids and describe with examples, pyramids of number and biomass.



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13. What is primary productivity? Give brief description of factors that affect primary productivity



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14. Define decomposition and describe the processes and products of decomposition.

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15. Give an account of energy flow in an ecosystem.

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16. Write important features of a sedimentary cycle in an ecosystem.

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17. Outline salient features of carbon cycling in an ecosystem



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Ncert Exemplar Problems A Multiple Choice Questions

1. Decomposers like fungi and bacteria are

Choose the correct answer :

(i) Autotrophs

(ii) Heterotrophs

(iii) Saprotrophs

(iv) Chemo-autotrophs

Choose the correct answer:

A. (i) and (iii)

B. (i) and (iv)

C. (ii) and (iii)

D. (i) and (ii)

Answer: C



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2. The process of mineralisation by microorganisms helps in the release of

A. inorganic nutrients from humus

B. both organic and inorganic nutrients from detritus

C. organic nutrients from humus

D. inorganic nutrients from detritus and formation of humus.

Answer: A



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3. Productivity is the rate of production of biomass expressed in terms of

(i) $(\text{kcalm}^{-3})\text{yr}^{-1}$

(ii) $g^{-2}\text{yr}^{-1}$

(iii) $g^{-1}\text{yr}^{-1}$ (iv) $(\text{kcalm}^{-2})\text{yr}^{-1}$

A. (ii)

B. (iii)

C. (ii) and (iv)

D. (i) and (iii)

Answer: C



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4. An inverted pyramid of biomass can be found in which ecosystem

A. Forest

B. Marine

C. Grassland

D. Tundra

Answer: B



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5. Which of the following is not a producer ?

A. Spirogyra

B. Agaricus

C. Volvox

D. Nostoc

Answer: B



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6. Which of the following ecosystems is most productive in terms of net primary production?

A. Deserts

B. Tropical rain forests

C. Oceans

D. Estuaries

Answer: B



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7. Pyramid of numbers is

A. Always upright

B. Always inverted

C. Either upright or inverted

D. Neither upright nor inverted

Answer: C



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8. Approximately how much of the solar energy that falls on the leaves of a plant is converted to chemical energy by photosynthesis

A. Less than 1 %

B. 2 – 10 %

C. 30 %

D. 50 %

Answer: B



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9. Among the following , where do you think the process of decomposition would be the fastest ?

A. Tropical rain forest

B. Antarctic

C. Dry arid region

D. Alpine region

Answer: A



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10. How much of the net primary productivity of a terrestrial ecosystem is eaten and digested by herbivores ?

A. 1 %

B. 10 %

C. 40 %

D. 90 %

Answer: B



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11. During the process of ecological succession the changes that take place in communities are

- A. Orderly and sequential
- B. Random
- C. Very quick
- D. Not influenced by the physical environment

Answer: A



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12. Climax community is in a state of

A. non - equilibrium

B. equilibrium

C. disorder

D. constant change

Answer: B



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13. Among the following biogeochemical cycles, which one does not have losses due to respiration?

A. Phosphorus

B. Nitrogen

C. Sulphur

D. All of the above

Answer: D



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14. The sequence of communities of primary succession in water is

A. phytoplankton , sedges, free - floating hydrophytes, rooted hydrophytes , grasses and trees.

B. phytoplankton, free - floating hydrophytes, rooted hydrophytes , sedges, grasses and trees.

C. free - floating hydrophytes, sedges , phytoplankton, rooted hydrophytes , grasses and trees.

D. phytoplankton , rooted submerged hydrophytes, floating hydrophytes, reed swamp , sedges , meadow and trees.

Answer: D



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15. The reservoir for the gaseous type of biogeochemical cycle exists in

A. stratosphere

B. atmosphere

C. ionosphere

D. lithosphere

Answer: B



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16. If the carbon atoms fixed by producers already have passed through three species, the trophic level of the last species would be

- A. scavenger
- B. tertiary producer
- C. tertiary consumer
- D. secondary consumer

Answer: C



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17. Which of the following type of ecosystem is expected in an area where evaporation exceeds precipitation, and mean annual rainfall is below 100mm:

A. Grassland

B. Shrubby forest

C. Desert

D. Mangrove

Answer: C



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18. The zone at the edge of a lake or ocean which is alternatively exposed to air and immersed in water is called

A. Pelagic zone

B. Benthic zone

C. Lentic zone

D. Littoral zone

Answer: D



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19. Edaphic factor refers to

A. Water

B. Soil

C. Relative humidity

D. Altitude

Answer: B



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20. Which of the following is an ecosystem service provided by a natural ecosystem?

A. Cycling of nutrients

B. Prevention of soil erosion

C. Pollutant absorption and reduction of threat of global warming

D. All of these

Answer: D



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Ncert Exemplar Problems B Very Short Answer Type Questions

1. Name an organism found as secondary carnivore in an aquatic ecosystem.



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2. What does the base tier of the ecological pyramid represent ?



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3. Under what conditions would a particular stage in the process of succession revert back to an earlier stage?



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4. Arrange the following as observed in Vertical stratification of a forest, Grass, Shrubby plants, Teak, Amaranths.

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5. Name an omnivore which occurs in both grazing food chain and the decomposer food chain.

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6. Justify the pitcher plant as a producer.

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7. Name any two organisms which can occupy more than one trophic level in an ecosystem.

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8. In the North East region of India, during the process of jhum cultivation, forests are cleared by burning and left for regrowth after a year of cultivation. How would you explain the regrowth of forest in ecological term?

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

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10. Among bryophytes, lichens and fern which one is a pioneer species in a xeric succession?

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11. What is the ultimate source of energy for the ecosystems?

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12. Is the common edible mushroom an autotroph or a heterotroph?

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13. Why are oceans least productive?

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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. Give any two examples of xerarch succession.

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17. Define self sustainability

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18. What are planktons?



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19. What is common to earthworm, mushroom, soil mites and dung beetle in an ecosystem.



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Ncert Exemplar Problems C Short Answer Type Questions

1. Organisms at a higher trophic level have less energy available. Comment.



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2. The number of trophic levels in an ecosystem are limited. Comment.



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3. Is an aquarium a complete ecosystem?



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



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5. Human activities interfere with carbon cycle. List any two such activities.



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6. Flow of energy through various trophic levels in an ecosystem is unidirectional and non-cyclic. Explain.



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7. 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 fulfill their energy requirements?



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



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10. Primary productivity varies from ecosystem to ecosystem. Explain ?



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11. 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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12. What is an incomplete ecosystem? Explain with the help of suitable example.

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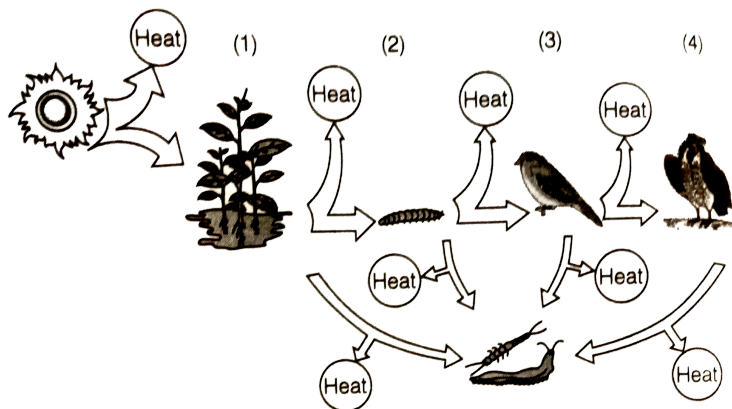
13. What are the shortcomings of ecological pyramids in the study of ecosystem?

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14. How do you distinguish between humification and mineralisation?

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15. Fill in the trophic levels (1,2,3 and 4) in the boxes provided in the figure.



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

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1. A farmer harvests his crop and expresses his harvest in three different ways.

(a) I have harvested 10 quintals of wheat.

(b) I have harvested 10 quintals of wheat today in one acre of land.

(c) I have harvested 10 quintals of wheat in one acre of land, 6 months after sowing.

Do the above statements mean one and the same thing. If your answer is 'yes', give reasons. And if your answer is 'no' explain the meaning of each expression.



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2. Justify the following statement in terms of ecosystem dynamics. "Nature tends to increase the gross primary productivity, while man tends to increase the net primary productivity".



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3. Which of the following ecosystems will be more productive in terms of primary productivity? Justify your answer. A young forest, a natural Old forest, a shallow polluted lake, alpine meadow.



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4. What are the three types of ecological pyramids.

What information is conveyed by each pyramid with regard to structure, function and energy in the ecosystem.



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5. Write a short note on pyramid of numbers and pyramid of biomass.



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6. "The energy flow in the ecosystem follows the second law of thermodynamics." Explain.



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7. 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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8. Give two examples of artificial or man made ecosystems. List the salient features by which they differ from natural ecosystems.



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9. The biodiversity increases when one moves from the pioneer to the climax stage. What could be the explanation?



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10. What is a biogeochemical cycle. What is the role of the reservoir in a biogeochemical cycle? Give an example of a sedimentary cycle with reservoir located in earth's crust.



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11. What will be the P/R ratio of a climax community and a pioneer community? What explanation could you offer for the changes seen in P/R ratio of a pioneer community and the climax community?



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Higher Order Thinking Skills Brain Twisting Very Short Answer Questions

1. What is emmigration?



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2. What is ecosystem?



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3. Define stratification.



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4. What are seral communities ?



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5. What are xerophytes?



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6. What are hydrophytes?



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7. What is immigration?



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8. Define natality rate



[Watch Video Solution](#)

9. What is natality?



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10. Define Ecotone.



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Higher Order Thinking Skills Brain Twisting Short Answer Questions

1. Why are bacteria called decomposers ?



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2. Define grazing food chain



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3. Define ecological pyramids



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4. Enlist the main characteristics of desert biome.

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5. What is leghaemoglobin ? Give its role in N_2 fixation.

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6. Write a difference between net primary productivity and gross primary productivity.

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7. Starting from a bare a bare rock or site or site of a volcanic eruption , trace the organisms that participate in the process of succession.

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8. What is stratification?

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9. How does a foodweb increase the stability of an ecosystem ?

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10. What is Catabolism?

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11. Discuss the energy flow in a food chain formed of three trophic levels.

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12. Define succession. Describe succession in a pond.

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13. What is Mineralisation?



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14. What is Pioneer community?



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15. Define Seral community



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Higher Order Thinking Skills Brain Twisting Long Answer Questions

1. What is climax community?



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2. What is meant by a sedimentary cycle ? Depict diagrammatically the phosphorus or sulphur cycle.



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3. What are primary producers?



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4. What are primary producer?



[Watch Video Solution](#)

5. Define stratification



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Quick Memory Test A Say True Or False

1. Lakes rich in organic compounds are Oligotrophic lakes.



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2. Transitional zone between the adjacent biomes is ecotype.



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3. Taiga is the northern coniferous forest.



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4. Grassland with scattered trees is called chhapparal.



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5. Alpine forests of Himalayas have dwarf shrubby plants.



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6. Driving force in an ecosystem is formed of producers.



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7. Submerged hydrophytes have stomata on upper surface.



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8. Energy and materials follow unidirectional flow.



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9. Earth is a closed system as far as materials are concerned.



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10. Water and Phosphorus cycles are gaseous cycles.



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11. Biosphere is also called Ecosphere.



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12. The ecological succession taking place in dry area is xerarch.



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13. The effect of individuals of different species on each other is called co - action.



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14. The competition of individuals may be for food , space , light and other physical factors .

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15. Heterotrophic succession takes place on substratum having plenty of minerals in soils.

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16. The introduction of new life forms in bare areas is initiated by act of migration.



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17. Migration, ecesis and aggregation are collectively called as invasion.



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18. Plant communities are always stable.



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19. It is possible to predict the direction of succession.



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20. Plant ecosystem is an orderly process of ecosystem development.

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21. Phosphorus cycle is an example of sedimentary cycle.

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22. Nitrogen cycle is an example of sedimentary cycle.

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23. The pyramid of energy is always upright.



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24. The energy flow in an ecosystem is unidirectional.



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25. Breakdown of organic molecules into inorganic molecules is carried out by producers.



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Quick Memory Test B Complete The Missing Links

1. The biotic community together with the physical environment forms an interacting system called



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2. Each step in a food chain represents in a



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3. Interlocking network of food chains is called as



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4. The principal grassland of South America is

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5. Organisms which can tolerate wide temperature variations are called.....

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6.are unstable due to absence of diversity and self - regulating mechanisms.

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7. In India, tropical rain forests are found inand
.....



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8.forests are found in Himalayas.



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9. When the primary productivity is calculated in terms of total plant community of an ecosystem , it is called..... Productivity.



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10. Phosphorus cycle istype of cycle.

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11. Each higher trophic level in a food chain can utilize onlyof energy.

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12.is a denitrifying bacterium.

 [Watch Video Solution](#)

13. The pyramid ofis always upright.



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14. Inverted pyramid is generally found in



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15. Dead plant and animal remains are called



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16. Ecological succession on the sand dune is called.....

 [Watch Video Solution](#)

17. Pioneer community in the lithosere is

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18. The serial changes in previously sterile or totally barren area is called.....

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19. Intermediate community between pioneer and climax community is called.....

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20. The final and stable community of the succession is the community .

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21.is the term used for succession taking place on sand dunes.

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22. The climax community which is under the control of the climate of the area, is known as

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23. When the succession is arrested and help indefinitely at the stage preceding the climax, it is termed as

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24. The succession in reverse direction due to adverse conditions is termed as

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25. Ecological succession is also known as

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26. Plants are calledbecause they fix carbon dioxide.

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27. Natural reservoir of phosphorus is in

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28. Rate of biomass production is called.....

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29. Phosphorus showstype of nutrient cycle.

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30. A.....is a series of trophic levels in which there is repeated eating and being eaten by to transfer the food energy .



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31. A.....is a network formed by interconnection of many food chains to provide alternative pathways of food availability .



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32. The amount of food energy produced or obtained or stored by a particular trophic level per unit area in a unit time is

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33. The major reservoir of carbon on earth on earth is

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34. Succession on an pre - vegetated area destroyed by a fire represents

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35. Synthesis of organic molecules from inorganic molecules in the presence of sunlight is carried out by the organism called..... .

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36. Succession on a bare rock represents

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37. Final and more or less stable community in a biotic succession is called

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Quick Memory Test C Choose The Correct Alternative

1. Reducers of ecosystem are bacteria and fungi/macroconsumers.

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2. Physiognomy refers to physical appearance / functional status of an ecosystem.

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3. Lowest productivity on lithosphere is of desert /estuarine biome.

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4. Fairly decomposed organic matter is called litter /detritus /duff.

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5. Primary consumers always belong to first/second trophic level.

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6. Shorter/longer food chains provide more energy.

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7. In aquatic ecosystems, GFC/DFC are more important for energy flow.

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8. On average , the energy tropped by the producers is 1 - 5 per cent / 2 - 10 per cent of incident light radiations.

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9. Pyramid of biomass in a marine ecosystem is straight/inverted.

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10. Climax community is reached earlier in perisere/subsere.

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11. With reference to minerals, the earth is a/an closed/open system.

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12. Phosphorus cycle is a sedimentary/gaseous cycle.

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13. Ocean/Atmosphere acts as global sink for carbon dioxide.

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14. Azotobacter bacterium is anaerobic/aerobic free living N_2 -fixer.

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15. Savannah is a tropical grassland/temperate grassland.

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Revision Exercises I Multiple Choice Questions Mcqs

1. Choose the correct answer :

The term ecosystem was coined by :

A. Odum

B. Ernst Haeckel

C. Tansley

D. Reiter

Answer: C



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2. Choose the correct answer :

Maximum water holding capacity is possessed by which kind of soil ?

A. Silt

B. Sand

C. Clay

D. Gravel

Answer: C



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3. Choose the correct answer :

The possible beneficial effect of grazing animals is the :

- A. Eradication of weeds
- B. Removal of wild plants
- C. Removal of wild animals
- D. Addition of their excreta in the soil

Answer: D



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4. Choose the correct answer :

The rate of conversion of light energy into chemical energy or organic molecules in an ecosystem is :

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

Answer: B



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5. Choose the correct answer :

These belong to the category of primary consumers :

- A. Eagle and snake
- B. Insects and cattle
- C. Snake and Frog
- D. Water insects

Answer: B



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6. Choose the correct answer :

If the high altitude birds become rare or extinct , the plants which may disappear long with them are :

A. Pine

B. Oak

C. Orchids

D. Rhododendrons

Answer: B



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7. Choose the correct answer :

An ecosystem which can be easily damaged but can recover after some time if damaging effect stops will be having :

- A. Low stability and low resilience
- B. High stability and high resilience
- C. Low stability and high resilience
- D. High stability and low resilience

Answer: C



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8. Which of the following is expected to have the highest value ($gm/m^2/yr$) in a grassland ecosystem?

- A. Gross production (GP)
- B. Net production (NP)
- C. Secondary production
- D. Tertiary production

Answer: A



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9. If by radiation all nitrogenase enzymes are inactivated, then there will be no

- A. Conversion from nitrate to nitrite in the legumes
- B. Conversion from ammonium to nitrate in soil
- C. Fixation of nitrogen in the legumes
- D. Fixation of atmospheric nitrogen

Answer: D



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10. Choose the correct answer :

In which one of the following habitats , does the decimal temperature of soil surface vary most ?

A. Desert

B. Grassland

C. Shrub land

D. Forest

Answer: A



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11. Choose the correct answer :

The Great Barrier Reef along the east coast of Australia can be categorized as :

A. population

B. Community

C. Ecosystem

D. Biome

Answer: D



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12. Choose the correct answer :

Biological equilibrium is an equilibrium among the :

A. Producers

B. Producers and consumers

C. Producers and decomposers

D. Producers , consumers and decomposers

Answer: D



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13. Choose the correct answer :

Pyramid of biomass in a pond ecosystem is :

A. Inverted

B. Always upright

C. Sometimes upright

D. Upright and sometimes inverted

Answer: A



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14. Choose the correct answer :

In a pond ecosystem , benthos means :

A. Virus

B. Bacteria

C. Zooplanktons in water surface

D. Primary consumers in the depth of a pond

Answer: D



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15. Choose the correct answer :

Pond is an example of :

A. Natural ecosystem

B. Artificial ecosystem

C. Grassland ecosystem

D. Forest ecosystem

Answer: A



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16. Choose the correct answer :

When the number of organisms at successive levels are plotted they assume the shape of a pyramid This is called pyramid of :

A. Biomass

B. Number

C. Energy

D. None of these

Answer: B



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17. Choose the correct answer :

Acclimatization is :

A. Introduction

B. Pure - line breeding

C. Pure -line selection

D. Adaptation to new environment

Answer: D



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18. Choose the correct answer :

The average efficiency of energy transfer from

herbivore to carnivore level is :

A. 5 %

B. 10 %

C. 20 %

D. 30 %

Answer: B



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19. Choose the correct answer :

In an ecosystem :

A. Movement of energy is unidirectional

B. Energy cycling is an independent process

C. Energy cycling and nutrient cycling a coupled process

D. Micro and macronutrients cycle at same pace

Answer: A



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20. Choose the correct answer :

During food chain the maximum energy is stored in :

A. Producers

B. Decomposers

C. Herbivores

D. Carnivores

Answer: A



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21. Choose the correct answer :

In a food chain, the total amount of living material is depicted by :

A. Pyramid of biomass

B. Trophic levels

C. Pyramid of number

D. Pyramid of energy

Answer: A



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22. Choose the correct answer :

Which of the following is most stable ecosystem ?

A. Mountain

B. Desert

C. Forest

D. Ocean

Answer: D



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23. Choose the correct answer :

In a food web , hyaenas and vultures are :

- A. Predators
- B. Scavengers
- C. Decomposers
- D. Primary consumers

Answer: B



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24. Choose the correct answer :

Ecological pyramids were first devised by :

A. Charles Elton

B. R. Hesse

C. R.A. Lindemann

D. Justus von Liebig

Answer: A



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25. Choose the correct answer :

Maximum net productivity in terrestrial ecosystems is found in :

- A. Rain forests
- B. Deciduous forests
- C. Mangrove plantation
- D. Both (a) & (b)

Answer: A



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26. Choose the correct answer :

The minimum number of components required for an ecosystem to survive are :

- A. Producers & decomposers
- B. Producers & primary consumers
- C. Producers & secondary consumers
- D. Primary consumers & decomposers

Answer: A



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27. Choose the correct answer :

Bacteria and fungi in a forest ecosystem are generally :

- A. Producers
- B. Decomposers
- C. Primary consumers
- D. Secondary consumers

Answer: B



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28. Choose the correct answer :

Ecosystem creates :

- A. Food chains
- B. Food web
- C. Both of these
- D. None of these

Answer: C



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29. Choose the correct answer :

A sedimentary type of biogeochemical cycle is :

A. Carbon

B. Hydrologic

C. Nitrogen

D. Sulphur

Answer: D



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30. What is Humus?





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Revision Exercises II Very Short Answer Questions A Questions From State Board Examinations

1. Which ecological pyramid is always straight ?



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2. Who are the primary consumers in the food chain ?



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3. What is primary source of energy in detritus food chain ?

 [Watch Video Solution](#)

4. Draw a pyramid of biomass in a terrestrial ecosystem .

 [Watch Video Solution](#)

5. The species that invade a nude area calledspecies . In a primary succession on rocks , the group that invade first are

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6. The rate of biomass production is called productivity . They are of two types : Gross primary productivity and Net primary productivity . How these two productivities are related ?

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7. Write names of two atmospheric nitrogen - fixing bacteria.

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8. Define biome.



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9. On the basis of number , draw a pyramid of tree ecosystem .



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10. What is biosphere ?



[Watch Video Solution](#)

11. When the ecological pyramid of number is inverted ?

 [Watch Video Solution](#)

12. Write an example of a detritus food chain.

 [Watch Video Solution](#)

13. On earth, life exists even in extreme and harsh conditions. Mention any two major biomes in India.

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14. What is primary production ?



[Watch Video Solution](#)

15. What is pioneer community ?



[Watch Video Solution](#)

16. Give an example of gaseous cycle.



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17. What is standing crop in an ecosystem ?



[Watch Video Solution](#)

18. What is standing state in an ecosystem ?



[Watch Video Solution](#)

19. What is stratification in an ecosystem ?



[Watch Video Solution](#)

20. What is primary source of energy in a detritus food chain ?



[Watch Video Solution](#)

21. Name pioneer community in lithosere .



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22. State the definition of gross primary productivity.



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23. Name the type of food chain that is the major conduit for energy flow in an aquatic ecosystem.



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Revision Exercises II Very Short Answer Questions B Questions From Cbse Examinations

1. Why is Eichhornia crassipes nicknamed as "Terror of Bengal " ?



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2. Standing crop and biomass are related to each other, how?



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3. Write the equation that helps in deriving the net primary productivity of an ecosystem.

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

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5. What is a detritus food chain made up of ? How do they meet their energy and nutritional requirements?

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6. How is 'stratification' represented in a forest ecosystem?

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7. Name the type of association that genus *Glomus* exhibits with higher plants.

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8. What are decomposers?

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9. Name the pioneer species that invade in primary succession on bare rock and in water.

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10. The rate of secondary succession is faster than primary succession because.

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**Revision Exercises Iii Short Answer Type I Questions A
Questions From State Board Examinations**

1. Why pyramid of numbers in a grassland ecosystem is upright ?



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2. Pyramid of energy in an ecosystem can never be inverted . Why ?



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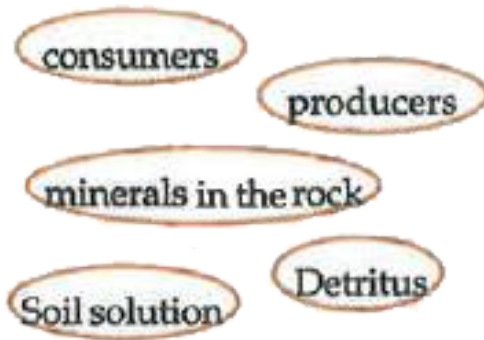
3. In food chain , the herbivores are called connecting link between producers and carnivores . Why



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4. Given below are the components related to simplified model of mineral cycling in terrestrial ecosystem . Construct a flow chart .

[Hint : weathering of rock]



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5. Primary succession on the rocks is called xerosere.

Answer the following .

(i) Name the pioneer community

(ii) Organic acids have important role in this succession Justify.



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6. Draw a diagrammatic sketch of phosphorus cycle.



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7. State two laws of thermodynamics to explain flow of energy in an ecosystem.



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8. What is food chain ? Draw a food chain.

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9. What is Ecological efficiency ? Explain its significance ?

 [Watch Video Solution](#)

10. Explain the characteristics of food web.

 [Watch Video Solution](#)

11. Write notes on : (i) Food chain (ii) Trophic level.



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12. State differences between grazing food chain and detritus food chain.



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13. Write four characteristics of food chain.



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14. Nutrients are never lost from the ecosystems .

Write about (a) Gaseous cycle (b) Sedimentary cycle.

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15. Ecological pyramids are usually upright. Meanwhile some pyramid of biomass is inverted. Explain the reason.

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16. Name various biomes of India.

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17. Why earthworms are referred to as Farmer's friends and what is the role of decomposers ?



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18. What do you mean by gaseous and sedimentary nutrient cycle ? Give an example of each .



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19. Briefly explain 10% law of energy transfer in an ecosystem.

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20. Draw a pyramid of biomass in a terrestrial habitat.

 [Watch Video Solution](#)

21. What is meant by ecological pyramid ? Name the different types of ecological pyramids.

 [Watch Video Solution](#)

22. Differentiate between production and decomposition.

 [Watch Video Solution](#)

23. Define productivity . Mention the two types of productivity.

 [Watch Video Solution](#)

24. What is ecological pyramid ? Draw the pyramid of numbers.

 [Watch Video Solution](#)

25. Write a short note on ecological succession on a bare rock.

 [Watch Video Solution](#)

26. Differentiate between primary and secondary succession. Provide one example of each.

 [Watch Video Solution](#)

27. Why is pyramid of biomass in sea generally inverted ? Explain.

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28. How do climatic factors affect process of decomposition in ecosystem ? Explain.



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29. Under what circumstances do the secondary succession begin ? Why does it proceed faster than primary succession ?



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30. The different stages of primary succession in water are represented below . Fill the gaps :

- (a) Phytoplankton (b) (c) Submerged free floating plants (d)
- (e) (f) Shrub stage (g)

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31. Briefly explain the ecological pyramid which is always upright.

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32. The products of ecosystem processes are named as ecosystem services . List out four such services.



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33. Pyramid of energy is never been inverted . Why ?



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34. What is gross primary productivity ? In what unit is it expressed ?



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35. Give a brief account of productivity .



Watch Video Solution

36. Write a short note on energy flow.



Watch Video Solution

37. Describe briefly detritus food chain



View Text Solution

38. What is ecosystem ? Explain its two components .



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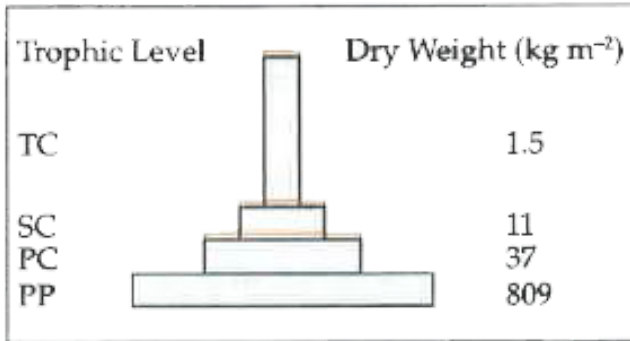
39. Starting from a bare rock or the site of volcanic eruptions, trace the organisms, that participate in the process of succession.



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40. (a) Identify the type of ecological pyramid given below .

(b) Pyramid of energy is always upright . Why ?

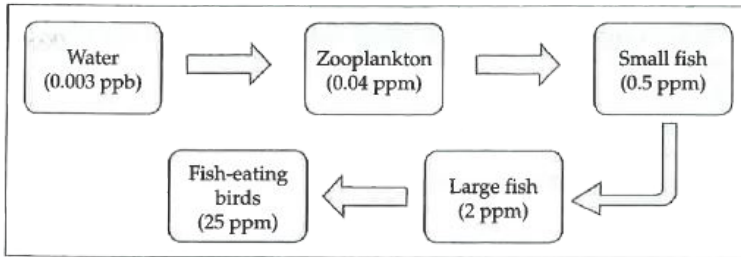


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41. Given below is a flow chart showing the accumulation of DDT in different trophic levels.

(a) Name the phenomenon.

(b) How does it affect bird population?



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Revision Exercises Iii Short Answer Type I Questions B Questions From Cbse Examinations

1. Differentiate between a detritivore and a decomposer giving an example of each.

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2. State the difference between the first trophic levels of detritus food chain and grazing food chain.



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3. (a) Name the pioneer species organisms on a bare rock.

(b) How do pioneer species help in establishing the next type of vegetation



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4. Name the pioneer and the climax species in a water body. Mention the changes observed in the biomass and the biodiversity of the successive seral communities developing in the water body.



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5. List the features that make a stable biological community.



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6. Identify the type of the given ecological pyramid and give one example each of pyramid of number and pyramid biomass in such case.



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7. Differentiate between a detritivore and a decomposer giving an example of each.

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8. The gradual and predictable change in the species composition of a given area is called ecological succession . What you understand with the pioneer and community in this context ?



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9. Why the pyramid of energy is always upright ?
Explain.



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10. "It is possible that a species may occupy more than one trophic level in the same ecosystem at the same time." Explain with the help of one example.



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11. Apart from being part of the food chain, predators play other important roles. Mention any two such roles supported by examples.



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12. How are productivity, gross productivity, net primary productivity and secondary productivity interrelated ?

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13. Your advice is sought to improve the nitrogen content of the soil to be used for cultivation of a non-leguminous terrestrial crop.

(a) Recommend two microbes that can enrich the soil with Nitrogen.

(b) Why do leguminous crops not require such enrichment of the soil?

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14. Justify the statement , "Pyramid of energy is always straight and can never be inverted "



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15. The pyramid of biomass not always straight "
Explain the statement.



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16. Construct a pyramid of biomass starting with phytoplankton. Label its three trophic levels. Is the pyramid upright or inverted ? Justify your answer.



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Revision Exercises Iv Short Answer Type Ii Questions A Questions From State Board Examinations

1. Define ecological pyramids and describe the pyramid of number .



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2. Explain ecological pyramids with suitable diagrams.



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3. (a) Fill in the blanks .

Species A	Species B	Type of Interaction
+	-
+	+
+	Commensalism

(b) Define the following :

(i) Microhabitat (ii) Symbiosis (iii) Niche



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4. Energy flow in an ecosystem is unidirectional .

Comment



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5. Draw a simplified model of phosphorus cycling in a terrestrial ecosystem.



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6. Write a short note on carbon cycle .



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7. What is ecological succession ? Explain succession of plants on a bare rock .



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8. What is primary productivity ? Explain factors affecting it .



[Watch Video Solution](#)

9. Define decomposition and describe the processes and products of decomposition.



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10. How does primary succession take place on a bare rock (xerarch).

 [Watch Video Solution](#)

11. Define ecological succession Give four different between seral and climax community during such

 [Watch Video Solution](#)

12. What are various types of food chains . Explain detritus food chain .

 [Watch Video Solution](#)

13. Define standing crop. Why is the pyramid of biomass in aquatic ecosystems inverted ?

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14. Give an account of energy flow in an ecosystem.

 [Watch Video Solution](#)

15. Discuss the biotic components of a pond ecosystem

 [Watch Video Solution](#)

16. Describe ecological pyramid of biomass .

 [Watch Video Solution](#)

17. What is food chain ? Explain its types .

 [Watch Video Solution](#)

18. Define food web ? Given its characters and example

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19. What is ecological pyramid? Describe pyramid of energy .



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20. An ecosystem consists of the following population .
Phytoplankton, Man Fish, Zooplankton, Draw a food chain denoting each trophic level.



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21. What is food chain ? Mention the basis characteristics of food chain .

 [Watch Video Solution](#)

22. What is ecological succession ? How Hydrarch succession is different from xerarch succession ?

 [Watch Video Solution](#)

23. Write note on ecosystem services.

 [Watch Video Solution](#)

24. What is decomposition ? What climate factors regular it ?

 [Watch Video Solution](#)

25. Describe primary succession in water .

 [Watch Video Solution](#)

26. The limitation of ecological pyramids is

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27. Differentiate between carbon and phosphorus cycle

..

 [Watch Video Solution](#)

28. Describe the role of bacteria in N_2 - fixation .

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29. Write any three differences between food-chain and food - web

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Revision Exercises Iv Short Answer Type Ii Questions B
Questions From Cbse Examinations

1. (a) In which ecosystem is the pyramid of biomass inverted ?

(b) Why is it inverted Explain .

(c) Name the type of pyramid that is always upright .

Given reasons .



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2. Name the pioneer species on a bare rock. How do they help in establishing the next type of vegetation?

Mention the type of climax community that will ultimately get established.



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



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4. Differentiate between two different types of pyramids of biomass with the help of one example of each.



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5. i) What is primary productivity? Why does it vary in different types of ecosystem?

ii) State the relation between gross and net primary productivity.

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6. State the function of a reservoir in a nutrient cycle.
Explain the simplified model of carbon cycle in nature.

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7. In a food-chain, a trophic level represents a functional level, not a species. Explain.

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8. Differentiate between primary and secondary succession. Provide one example of each.

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9. Describe the inter-relationship between productivity, gross primary productivity and net productivity.

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10. (a) What is primary productivity of an ecosystem and how is it expressed ?

(b) Explain what does the equation given below show :

$$\text{NPP} = \text{GPP} - \text{R}$$

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11. (a) Name the type of detritus that decomposes faster. List any two factors that enhance the rate of decomposition.

(b) Write the different steps taken in humification and memorisation during the process of decomposition.

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Revision Exercises Vi Long Answer Type Questions A Questions From State Board Examinations

1. What is food chain ? Describe all trophic levels of a food chain with the help of examples.

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2. Describe the ecological succession .

 [Watch Video Solution](#)

3. Write a note on decomposition,

 [Watch Video Solution](#)

4. Briefly explain the biotic components of an ecosystem .

 [Watch Video Solution](#)

5. Explain energy flow in an ecosystem with suitable diagrams.

 [Watch Video Solution](#)

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

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7. Describe the various stages of succession in an aquatic environment .

 [Watch Video Solution](#)

8. Describe energy flow in an ecosystem



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9. Draw an outline to show the carbon cycle in nature .



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10. Define ecological succession . Differential between primary succession and secondary succession .



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11. What are ecological pyramids ? Given is three types with example .

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12. Define ecological succession . Describe ecological succession on a bare rock .

 [Watch Video Solution](#)

13. What is meant by ecological pyramid ? Name the different types of ecological pyramids.

 [Watch Video Solution](#)

14. (a) Explain the significance of ecological pyramids with the help of an example.

(b) Why are the pyramids referred to as 'upright' or 'inverted'? Explain.



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15. Explain different states of biotic succession on bare rock.



Watch Video Solution

16. What is ecosystem ? Discuss its different components with specific example of pond as an ecosystem.

 [Watch Video Solution](#)

17. Briefly explain the biotic components of an ecosystem .

 [Watch Video Solution](#)

18. Describe the process of the flow of energy in different trophic levels of an ecosystem .

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19. Define ecological succession . Describe the general process of plant succession with an example .

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Revision Exercises Vi Long Answer Type Questions B Questions From Cbse Examinations

1. Explain the carbon cycle with the help of a simplified model.

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2. Explain how does : (a) a primary succession start on a bare rock and reach a climax community?

(b) the algal bloom eventually choke the water body in an industrial area?



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3. Draw a 'pyramid of numbers' of a situation where a large population of insects feed upon a very big tree. The insects in turn, are eaten by small birds which in turn are fed upon by big birds.

(b) Differentiate giving reason, between the pyramid of

biomass of the above situation and the pyramid of numbers that you have drawn.



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4. (a) Explain the significance of ecological pyramids with the help of an example.

(b) Why are the pyramids referred to as 'upright' or 'inverted'? Explain.



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5. (a) Explain primary productivity and the factors that influence it.

(b) Describe how do oxygen and chemical composition of detritus control decomposition .

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6. Describe the advantages for keeping the ecosystem healthy.

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7. It is often said that the pyramid of energy is always upright. On the other hand, the pyramid of biomass can be both upright and inverted." Explain with the help of example and sketches .



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8. (a) Taking an example of a small pond, explain how the four components of an ecosystem function as a unit.

(b) Name the type of food chain that exists in a pond.



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9. Discuss the role of healthy ecosystem services as a pre-requisite for a wide range of economic, environmental and aesthetic goods and services.



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10. (a) What is an ecological pyramid ? Compare the pyramids of energy , biomass and numbers.

(b) Write any two limitations of ecological pyramids.



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11. (a) What is a trophic level in an ecosystem ? What is 'standing crop' with reference to it?

(b) Explain the role of the 'first trophic level' in an ecosystem.

(c) How is the detritus food chain connected with the grazing food chain in a natural ecosystem ?



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12. Given below is a table depicting population interactions between SQPecies A and SQPecies B.

Type of interaction	SQPecies A	SQPecies B
(a)	(-)	(+)
(b)	(+)	(-)

Name the type of interactions (a) and (b) in the above table.

Justify giving three reason, how the type of interaction (b) is important in an ecological context



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1. Which one of the following pairs is correctly matched ?

A. Rhizobium - parasite in the roots of leguminous plants

B. Mycorrhizae - Mineral uptake from soil

C. Yeast - product of biogas

D. Myxomycetes - The disease ringworm

Answer: B



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2. About 70% of total global carbon is found in

A. Oceans

B. Forests

C. Grasslands

D. Agroecosystems

Answer: A



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3. *Quercus* species is the dominant component in

A. Scrub forests

B. Tropical rain forests

C. Temperature deciduous forests

D. Alpine forests

Answer: C



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4. Consider the following statements concerning food chains

(i) Removal of 80% tigers from an area resulted in greatly increased growth of vegetation

(ii) Removal of most of the carnivores resulted in an increased population of deers

(iii) The length of food chains is generally limited to 3 - 4 trophic levels due to energy loss

(iv) The length of food chains may vary from 2 to 8 trophic levels

Which two of the above statements are correct?

A. 1,4

B. 1,2

C. 2,3

D. 3,4

Answer: C



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5. Slow rate of decomposition of fallen logs in nature is due to

- A. Anaerobic environment around them
- B. Low cellulose content
- C. Low moisture content
- D. Poor nitrogen content

Answer: D

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6. Which of the following is expected to have the highest value ($gm/m^2/yr$) in a grassland

ecosystem?

- A. Secondary production (SP)
- B. Tertiary production (TP)
- C. Gross production (GP)
- D. Net production (NP)

Answer: C



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7. 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: A



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8. Decomposers are

A. Autotrophs

B. Autoheterotrophs

C. Organotrophs

D. Heterotrophs

Answer: C



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9. The great barrier reef along the east coast of Australia can be categorized as

A. Population

B. Community

C. Ecosystem

D. Biome

Answer: C



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10. The amount of usable energy which is available for doing work when the temperature and pressure are uniform throughout the system is called

A. Enthalpy

B. Activation energy

C. Spontaneous energy

D. free energy

Answer: D



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11. Which of the following is considered as pioneer community in xerarch?

- A. Annual herb
- B. Perennial herb
- C. Scrub stage
- D. Lichen

Answer: D



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12. Approximately how much of the solar energy that falls on the leaves of a plant is converted to chemical energy by photosynthesis

A. 1 %

B. 10 %

C. 100 %

D. 60 %

Answer: A



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13. In which habitat does the diurnal soil temperature vary most ?

A. Sea

B. Lake

C. Tundra

D. Desert

Answer: D



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14. Which type of the following has inverted pyramid of energy

A. Grassland

B. Tree

C. Both of these

D. None of these

Answer: D



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15. Which of the following ecosystem has very little primary productivity?

A. Forest

B. River

C. sea

D. Grassland

Answer: B



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16. Free-living nitrogen-fixing aerobic bacterium is

A. Clostridium

B. Rhizobium

C. Azotobacter

D. Frankie

Answer: C



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17. Identify the plant belonging to the reed-swamp stage in hydrosere succession

A. Juncus

B. Sagittaria

C. Salix

D. Trapa

Answer: B



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18. The flow of energy along various trophic levels of an ecosystem is :

A. Unidirectional

B. Bidirectional

C. Multidirectional

D. Circular

Answer: A



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19. Decomposition of organic matter is brought about by:

- A. Protozoans
- B. Plants
- C. Micro-organisms
- D. None of these

Answer: C



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20. An interaction between two individuals where one is benefitted while the other is neither benefitted nor harmed is called as

- A. Prediction
- B. Mutualism
- C. Commensalism
- D. Parasitism

Answer: C



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21. 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 →

Answer: B



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

A. Phytoplanktons

B. Fish

C. Zooplanktons

D. Frog

Answer: B



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23. Which of the following is a symbiotic nitrogen fixer ?

A. Glomus

B. Azotobacter

C. Frankie

D. Azolla

Answer: C



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24. Which of the following rain forests is home to more than 10000 species of plants 3000 of fishes, 1300 of birds, 427 of mammals, 427 of amphibians, 378 of reptiles and more than 125000 invertebrates?

A. Amazonian

B. Tropical

C. Arctic tundra

D. Temperate

Answer: A



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25. Which of the following fixes atmospheric N_2 ?

A. Notice

B. Algae

C. Methanogens

D. none of these

Answer: A



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26. Pyramid of energy in a ecosystem is :

A. Always upright

B. Always erect

C. Constant

D. Declining

Answer: A



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27. Animals of colder climates generally have smaller limbs. This is called :

A. Niche rule

B. Allen's rule

C. Ehrilch rule

D. None of these

Answer: B



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28. The percentage of precipitation that can be stored in dams of India is :

A. 55

B. 18

C. 10

D. 43

Answer: C



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29. The least porous soil among the following is a:

A. Loamy soil

B. Silty soil

C. Clayey soil

D. Peaty soil

Answer: C



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30. The final stable community in ecological succession is:

A. Pioneers

B. sere

C. Carnivores

D. Climax

Answer: D



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31. The greatest problem of water conservation is to reduce the amount of

- A. Precipitation
- B. Runoff water
- C. Ground water
- D. Evaporation

Answer: B



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32. An example of symbiotic bacterium is

A. *Erwinia anylovora*

B. *Rhizobium leguminosarum*

C. *Xanthomonas compestris*

D. *Agrobacterium tumefaciens*

Answer: B



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33. In root nodules of legumes, leg-haemoglobin is important because

A. If transports O_2 to root nodules

B. If acts as oxygen scavenger

C. It provides energy to nitrogen fixing bacterium

D. It acts as Catalyst in transamination

Answer: B



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34. In an aquatic ecosystem, the trophic level equivalent to cows in grasslands is

A. Phytoplankton

B. Zooplanktons

C. Nektons

D. Benthos

Answer: B



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35. Deserts , grasslands, forests and tundra are the examples of :

- A. Biomass
- B. Biogeographical realms
- C. Ecosystems
- D. Biospheres

Answer: A



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36. Which of the following is a free-living nitrogen fixing bacterium present in the soil ?

A. Nitrosomonas

B. Rhizobium

C. Pseudomonas

D. Azotobacter

Answer: D



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

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

Answer: A



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38. Study the four statement (i-iv) given below and select the two correct ones out of them

(i) A lion eating a deer and a sparrow feeding on grains 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

The two correct statements are

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. One of the free nitrogen - fixed in paddy fields is :

A. Beijernickia

B. Rhodospirillum

C. Rhizobium

D. Azotobacter

Answer: B



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41. the common nitrogen - fixer in paddy fields is

A. Rhizobium

B. Azospirillum

C. Oscillatoria

D. Frankie

Answer: B



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42. Which one of the following is one of the characteristics of a biological community?

A. Stratification

B. Nasality

C. Mortality

D. sex ratio

Answer: A



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43. Which one of the following is most appropriately defined?

A. Host is an organism which provides food to another organism

B. Amensalism is a relationship in which one species is benefitted while the other is unaffected

C. Predator is an organism that catches and kills other organism for food

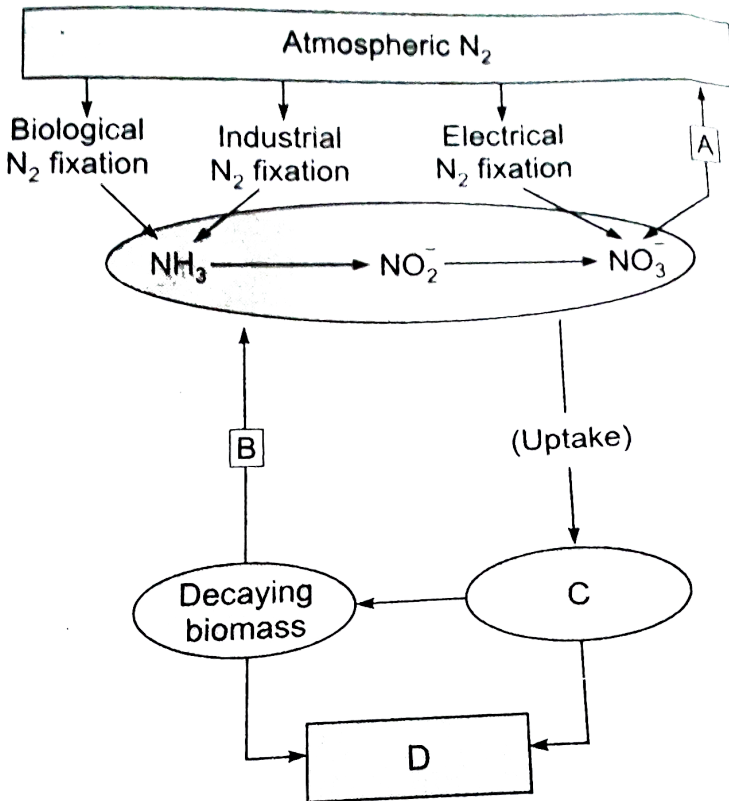
D. Parasite is an organism which always lives inside the body of other organism and may kill it

Answer: C



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44. Study the cycle shown in Fig. 12.7 and select the option which gives correct words for all the four blanks A, B, C, and D.



A.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
nitrification	ammonification	animals	plants

B.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
denitrification	ammonification	plants	animals

C.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
nitrification	denitrification	animals	plants

D.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
denitrification	nitrification	plants	animals

Answer: B



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45. Which of the ecological pyramids is always upright ?

- A. Pyramid of number
- B. Pyramid of biomass
- C. Pyramid of energy
- D. None of these

Answer: C



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46. Population are said to be sympatric when

- A. Two populations live together and freely interbreed to produce sterile offsprings .
- B. Two populations are physically isolated by natural barriers
- C. Two populations are isolated but occasionally come together to interbreed
- D. Two populations share the same environment but cannot interbreed

Answer: D



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47. A large regional unit characterised by vegetation type and associated fauna found in a specific climatic zone is called:

- A. Ecosystem
- B. Biological community
- C. Biome
- D. Biosphere

Answer: C



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48. In primary succession on rocks, the pioneer species are usually:

A. Algae

B. Fungi

C. Lichens

D. Bryophytes

Answer: C



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49. The "10 per cent law" is related to:

A. Mendelian genetics

B. Non-Mendelian genetics

C. Energy transfer from lower trophic to higher trophic level .

D. Energy consumption during photosynthesis in C_4 plants

Answer: C



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50. A phenomenon when a parasite parasitizes another parasite is known as :

A. Hyperparasitism

B. Parasitoids

C. Monozenous parasitism

D. Polyxenous parasitism

Answer: A



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51. The type of ecosystem with the highest mean plant productivity is :

A. Desert

B. Temperate grassland

C. Tropical rain forest

D. Tundra

Answer: C



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52. Bell-shaped polygonal pyramid indicates.

A. High percentage of young individuals

B. Moderate percentage of young individuals

C. Low percentage of young individuals

D. Low percentage of old individuals

Answer: B



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53. The transition zone between two communities is known as:

- A. Ecosphere
- B. Ecotone
- C. Ecocline
- D. Rhizosphere

Answer: B



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54. In India, tropical rain forests occur in

A. Jammu & Kashmir

B. Andamans

C. Uttar Pradesh

D. Himachal Pradesh

Answer: B



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55. Which one of the following is a denitrifying bacterium ?

A. Nitrobacter

B. Nitrosomonas

C. Pseudomonas

D. Escherichia coli

Answer: C



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56. Some of the nutrient cycles are labelled as below.

1. Sulphur cycle, Phosphorus cycle, 3. Carbon cycle and
4. Nitrogen cycle.

Of these, the sedimentary cycle is represented by:

A. A - only

B. B - only

C. C - only

D. A and B only

Answer: D



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57. Which of the following statements regarding decomposition is false?

A. Warm and moist environment favours decomposition

B. Decomposition rate is slower if detritus is rich in chitin and lignin

C. Earthworm is detritivore

D. Precipitation of soluble inorganic nutrients into soil horizon as unavailable salt is called mineralisation

Answer: D





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58. Barnacles growing on the back of whale is an example for :

A. Mutualism

B. Commensalism

C. Parasitism

D. Amensalism

Answer: B



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59. The alien species introduced into Lake Victoria that was responsible for the extinction of cichlid fishes is

- A. African catfish
- B. Water hyacinth
- C. Carrot grass
- D. Nile perch

Answer: D



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60. In ecosystem, cycling of nutrients is called

- A. Geological cycle
- B. Chemical cycle
- C. Geochemical cycle
- D. Biogeochemical cycle

Answer: D

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61. In ecological succession the climax community is best recognised by the following state

- A. $P = R$
- B. $P > R$

C. $P < R$

D. $P \neq R$

Answer: A



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62. The loss of energy as one proceeds from one trophic level to the next higher level is approximately

A. 30 %

B. 40 %

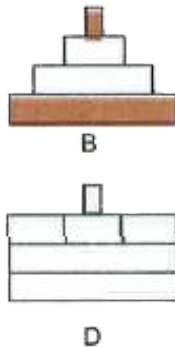
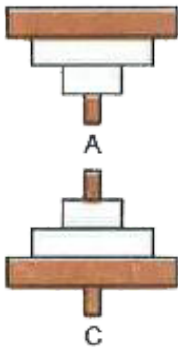
C. 60 %

D. 90 %

Answer: D

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63. Which of the following representations shown the pyramid of number in a forest ecosystem ?



A. D

B. A

C. B

D. C

Answer: C



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64. Mass of living matter at a trophic level in an area at any time is called:

- A. Standing crop
- B. Detritus
- C. Humus
- D. Standing state

Answer: A



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65. Of the total incident solar radiation the proportion of PAR is:

- A. About 70%
- B. About 60%
- C. Less than 50%
- D. More than 80%

Answer: C



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66. Large woody vines are more commonly found in



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67. An organism used as a biofertilizer for raising soyabean crop is:-

A. Azotobacter

B. Azospirillum

C. Rhizobium

D. Nostoc

Answer: C



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68. Nitrifying bacteria

- A. Oxidise ammonia to nitrates
- B. Convert free nitrogen to nitrogen compounds
- C. Convert proteins to ammonia
- D. Reduce nitrates to free nitrogen

Answer: A



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69. 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 levels

C. It is inverted in shape

D. It is upright in shape

Answer: C



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70. The function of leghaemoglobin in the root nodules of legumes is

- A. Inhibition of nitrogenase activity
- B. Oxygen removal
- C. Nodule differentiation
- D. Expression of nif gene

Answer: B



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71. Which one of the following statements is correct for secondary succession?

- A. It begins on a bare rock
- B. It occurs on a deforested site
- C. It follows primary succession
- D. It is similar to primary succession except that it has relatively fast pace

Answer: B

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72. Function of leghemoglobin (a red pigment) in root nodules of leguminous plants is

- A. To regulate O_2 supply in cells

B. To regulate CO_2 supply in cells

C. To regulate production of phenolic compounds

D. To regulate MO supply in cells

Answer: A



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73. Which of the following statements regarding decomposition is false?

A. In aquatic ecosystem grazing food chain is major conduit for energy flow

B. In terrestrial ecosystem , a large fraction of energy flows through detritus food chain

C. Detritus food chain begins with dead organic matter

D. Animals like cockroaches and crows are omnivorous

Answer: D



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74. Select the correct match:

- | | | |
|---|------------------------------|----------------|
| 1 | Sedimentary nutrient cycle | Nitrogen cycle |
| 2 | Pioneer species | Lichens |
| 3 | secondary succession | Burned forests |
| 4 | Pyramid of biomass
in sea | Upright |

A. A , B & D only

B. A & C only

C. B & C only

D. B & D only

Answer: C



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75. In grazing food chain, carnivores may also referred to as:

- A. Primary producers
- B. secondary productivity
- C. Primary consumers
- D. Secondary consumers .

Answer: B



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76. Select the correct match

- (A) Nirosoomonas - Nitrite to nitrate
- (B) Thiobacillus - Denitrification
- (C) Nostoc - Free-living nitrogen-fixer
- (D) Azotobacter - Anaerobic nitrogen-fixer

A. A & B

B. C & D

C. B & C

D. B & D

Answer: C



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77. Major ecological community of plants and animals extending over large natural area is known as:

- A. Bioregion
- B. Biosphere
- C. Biote
- D. Biome

Answer: D



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78. Standing crop refers to:

- A. All the photosynthetic living forms in an area
- B. All the living forms in an area
- C. Amount of living matter in a component population of an ecosystem at any time
- D. All of the crop plants in an area

Answer: C

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79. Which one of the following is denitrifying bacteria ?

- A. Nitrosomonas

B. Pseudomonas

C. Azotobacter

D. Nostoc

Answer: B



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80. Littoral zone is located along the:

A. High mountains

B. Sea

C. Rivers

D. Deserts

Answer: B



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81. "Complete competitors cannot coexist" is true for :

A. Character displacement

B. Competitive exclusion

C. Primary succession

D. Secondary succession

Answer: B



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82. Which of the following groups is absolutely essential functional component of the ecosystem?

- A. Producers
- B. Producers and herbivores
- C. Producers and detritivores
- D. Detritivores

Answer: C



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83. Which of the following pyramids is always upright and can never be inverted ?

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

Answer: C



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84. Most diverse organism of an ecosystem is:

A. Producers

B. Consumers

C. Carnivores

D. Decomposers

Answer: D



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85. Energy flow in an ecosystem is

A. Bidirectional

B. Unidirectional

C. All around

D. None of these

Answer: B



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86. Primary consumers are :

A. Carnivores

B. Herbivores

C. Decomposers

D. Omnivores

Answer: B



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87. When two ecosystem overlap each other , the overlapped area is called :

A. Habitat

B. Niche

C. Ecotone

D. Ecotype

Answer: C



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88. Which one of the following is not a gaseous biogeochemical cycle in ecosystem?

A. Sulphur cycle

B. Phosphorus cycle

C. Nitrogen cycle

D. Carbon cycle

Answer: B

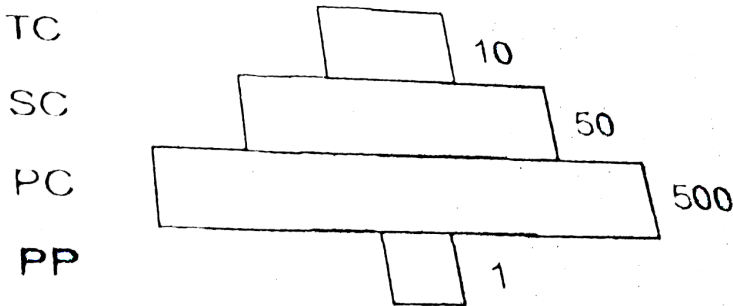


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89. Given below is an imaginary pyramid of numbers.

What could be one of the possibilities about certain

organisms at some of the different levels?



A. Level PC is "insects " and level SC is "small insectivorous birds "

B. Level PP is "phytoplanktons" in sea and whale on top level SC

C. Level one PP is "pipal tree" and level SC is "sheep"

D. Level PC is "rats" and level SC is "cats"

Answer: A



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90. Which one of the following is not a functional unit of an ecosystem

- A. Energy flow
- B. Decomposition
- C. Productivity
- D. Stratification

Answer: D



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91. The upright pyramid of number is absent in:

A. Pond

B. Forest

C. Lake

D. Grassland

Answer: B



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92. The detritus food chain begins with:

- A. Primary producers
- B. Primary consumers
- C. Secondary consumers
- D. Dead organic matter

Answer: D



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93. Dentrification is carried out by

- A. Pseudomonas

B. Nitrobacter

C. Nitrosomonas

D. Nitrococcus

Answer: A



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94. Lichen is an association between

A. Fungi and bryophyte

B. Fungi and algae

C. Algae and pteridophyte

D. Algae and bacteria

Answer: B



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95. Which one of the following has the largest population in a food chain ?

A. Producers

B. Primary consumers

C. Secondary consumers

D. Decomposers

Answer: D



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96. The important steps in the process of decomposition are

- A. Fragmentation and mineralization
- B. Leaching and catabolism
- C. Humification and mineralization
- D.

Answer: D



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97. In an ecosystem , at a particular time, standing crop includes

- A. Total living material
- B. Total detritus
- C. Both (a) and (b)
- D. Total nutrients in the crop

Answer: A



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98. In a pyramid of biomass, if the total dry weight (kg/m^2) of primary producers is about 809 it will decrease at tertiary consumer level upto

A. $37kg/m^2$

B. $11kg/m^2$

C. $5kg/m^2$

D. $1.5kg/m^2$

Answer: D



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99. Leghaemoglobin is produced in response to

- A. Respiration
- B. Photosynthesis
- C. Fatty acid synthesis
- D. N_2 fixation

Answer: D



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100. Which of the following relations is correct regarding GPP and NPP of an ecosystem ?

A. $NPP = GPP - \text{Animal consumption}$

B. $NPP = GPP + \text{Plant respiration}$

C. $NPP = GPP - \text{Plant respiration}$

D. $NPP = GPP + \text{Animal consumption}$

Answer: C



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101. Ecosystems having the highest primary productivity in

A. Oceans

B. Pond

C. Desert

D. Forest ecosystem

Answer: D



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102. In a particular climatic condition, decomposition rate is slower if:

A. Detritus is rich in nitrogen

B. Detritus is rich in humus

C. Detritus is rich in sugars

D. Detritus is rich in lignin and chitin

Answer: D



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103. An inverted pyramid of number and an inverted pyramid of biomass are respectively seen in:

- A. Grassland and tree ecosystem
- B. sea and tree ecosystem
- C. Tree and grassland ecosystem
- D. Sea and grassland ecosystem

Answer: C



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104. Which of the following is a pioneer in xerarch succession ?

A. Phytoplanktons

B. Lichens

C. Bryophytes

D. Rooted hydrophytes

Answer: B



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105. The biomass available for consumption to heterotrophs and the rate formation of new organic matter by consumers are defined as

A. Gross primary productivity and net primary productivity respectively

B. Net primary productivity and gross primary productivity respectively

C. Gross primary productivity and net secondary productivity respectively

D. Net primary productivity and gross secondary productivity respectively

Answer: D



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106. Which one of the following is a primary consumer?

A. Lion

B. Birds

C. Grasshopper

D. Wolf

Answer: C



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107. Which of the following is primary producer ?

A. Phytoplanktons

B. Grasshopper

C. Zooplanktons

D. Fishes

Answer: A



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108. Which of the following is a tertiary consumer ?

A. Zooplanktons

B. Lion

C. Birds

D. Wolf

Answer: D



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109. Natural reservoir of phosphorus is

A. Sea water

B. Animal bones

C. Rock

D. Fossils

Answer: C



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110. Secondary productivity is rate of formation of new organic matter by:

- A. Producer
- B. Parasite
- C. Consumer
- D. Decomposer

Answer: C



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111. Which one of the following processes during decomposition is correctly described?

A. Fragmentation - Carried out by organisms such as earthworm.

B. Humification - Leads to accumulation of a dark coloured substance called humus, which undergoes microbial action at a very fast rate .

C. Catabolism - Last step in the decomposition under fully anaerobic condition

D. Leaching - Water soluble inorganic nutrients rise to top layers of soil.

Answer: A

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112. The first stable product of fixation of atmospheric nitrogen in leguminous plants is

A. NO_2^-

B. Ammonia

C. NO_3^-

D. Glutamate

Answer: B



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113. Detritivores break down detritus into smaller particles. This process is called

A. Leaching

B. Fragmentation

C. Humification

D. Mineralization

Answer: B



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114. The correct sequence of seral stages in hydrosere is:

A. Plankton , submerged , floating , reed swamp, sedge meadow, woodland

B. Plankton , floating , submerged , reed swamp , sedge meadow, woodland

C. Plankton , submerged , floating , sedge meadow, reed swamp, woodland

D. Plankton , submerged , floating , sedge meadow,
woodland , reed swamp

Answer: A



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115. Pyramid of energy is :

- A. Always inverted
- B. Always upright
- C. Sometimes inverted sometimes upright
- D. None of these

Answer: B



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116. If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain?

Plant → Mice → Snake → Peacock

A. 0.2 J

B. 0.0002 J

C. 0.02 J

D. 0.002 J

Answer: C



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117. Match the following and select the correct option.

- (a) Earthworm (i) Pioneer species
- (b) Succession (ii) Detrivore
- (c) Ecosysem service (iii) Natality
- (d) Population growth (iv) Pollination

A. 1 (iii) 2 (ii) 3 (iv) 4 (i)

B. 1 (ii) 2 (i) 3 (iv) 4 (iii)

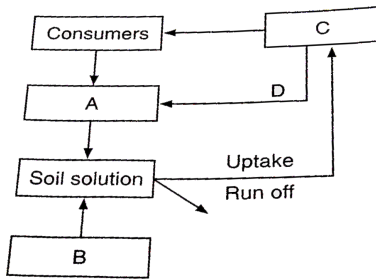
C. 1 (i) 2 (ii) 3 (iii) 4 (iv)

D. 1 (iv) 2 (i) 3 (iii) 4 (ii)

Answer: B

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118. Given below is a simplified model of phosphorus cycling in a terrestrial ecosystem with four blanks (A-D). Identify the blanks.



	A	B	C	D
(a)	Producers	Litter fall	Rock minerals	Detritus
(b)	Rock minerals	Detritus	Litter fall	Producers
(c)	Litter fall	Producers	Rock minerals	Detritus
(d)	Detritus	Rock minerals	Producers	Litter fall

A.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Detritus	Rock minerals	Producers	Litter fall

B.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Producers	Litter fall	Rock minerals	Detritus

C.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Rock minerals	Detritus	Litter fall	Producers

D.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Litter fall	Producers	Rock minerals	Detritus

Answer: A



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119. In a food chain, herbivores are:

- A. Primary producers
- B. Primary consumers
- C. Secondary consumers
- D. Decomposers

Answer: B



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120. Ecotone is

- A. A polluted area

B. Bottom of a lake

C. A transition zone between two communities

D. A zone of developing communities

Answer: C



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121. 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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122. 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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123. 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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124. 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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125. During biological nitrogen fixation, inactivation of nitrogenase by oxygen poisoning is prevented by

A. Leghemoglobin

B. Xanthophylls

C. Carotenes

D. Cytochrome

Answer: A



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126. In which of the following both pairs have correct combination ?

(a)	Gaseous nutrient cycle	Carbon and nitrogen
	Sedimentary nutrient cycle	Sulphur and phosphorus
(b)	Gaseous nutrient cycle	Carbon and sulphur
	Sedimentary nutrient cycle	Nitrogen and phosphorus
(c)	Gaseous nutrient cycle	Nitrogen and sulphur
	Sedimentary nutrient cycle	Carbon and phosphorus
(d)	Gaseous nutrient cycle	Sulphur and phosphorus
	Sedimentary nutrient cycle	Carbon and nitrogen



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127. During ecological succession

- A. Gradual and predictable changes in species composition occur in given area
- B. Establishment of a new biotic community is very fast in its primary phase
- C. Number and types of animals remain constant

D. Changes lead to a community that is in near equilibrium with the environment and is called pioneer community

Answer: A



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128. Most animals that live in deep oceanic waters are:

- A. Primary consumers
- B. Secondary consumer
- C. Tertiary consumer

D. Detritivores

Answer: D



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129. Earthworm is a

- A. Herbivore
- B. Secondary consumer
- C. Tertiary consumer
- D. Detritivore

Answer: D

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130. The first trophic level in an ecosystem consists of:

- A. Primary producers
- B. Primary consumers
- C. Secondary producers
- D. Secondary consumers

Answer: A

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131. Select the correct statement :

- A. Phosphorus cycle is an example of gaseous nutrient cycle
- B. Pyramid of biomass in sea is generally inverted
- C. By the process of humification , soluble inorganic nutrients go down into the soil horizon
- D. A given organism may not occupy more than one trophic level simultaneously

Answer: B



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132. The rate of biomass production and the rate of production of organic matter during photosynthesis are called respectively:

A. Total productivity , primary production

B. Gross primary productivity , gross secondary productivity

C. Net primary productivity , secondary productivity

D. Net primary productivity , gross primary productivity

Answer: D



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133. Pick out the correct option from (a) to (e).

A. Primary succession begins in areas where natural communities have been destroyed.

B. Hydrarch succession takes place in water.

C. The climax community is the community that is in near equilibrium with the immediate environment.

D. In newly cooled lava secondary succession occurs.

A. A and B are correct , C and D are incorrect

B. B and C are correct , A and D are incorrect

C. A and D are correct , B and C are incorrect

D. B only is correct , A , C and D are incorrect

Answer: B



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134. Read the statements regarding a stable community and choose the correct option :

(i) Must be resistant to occasional disturbances.

(ii) Should show much variation in productivity from year to year.

(iii) Must be resistant to invasions by alien species.

A. (i) and (ii) are correct

B. (i), (ii) and (iii) are correct

C. (i) and (iii) are correct

D. (i) and (iii) are correct

Answer: D



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135. which of the following is called is called a link between producers and carnivores in a grassland ecosystem ?

A. Frog

B. Snake

C. Insects

D. None of these

Answer: C



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136. Which of the following is secondary production in an ecosystem ?

A. Grass

B. Goat

C. Lion

D. None of these

Answer: B



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137. The pyramid of numbers in a grassland ecosystem is

- A. Upright
- B. Inverted
- C. Spindle - shaped
- D. None of these

Answer: A



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138. Which of the following is a correct food chain?

A. Grass → Grasshopper → Frog → Snake → Eagle

B. Grasshopper → Grass → Snake → Frog → Eagle

C. Eagle → Snake → Grasshopper → Grass → Frog

D. Frog → Snake → Eagle → Grasshopper → Grass

Answer: A



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139. The primary producers of the deep-sea hydrothermal vent ecosystem are:

- A. Coral reefs
- B. Green algeae
- C. Chemosynthtic bacteria
- D. Blue - green algae

Answer: C



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

A. Green algae

B. Lichens

C. Liverworts

D. Mosses

Answer: B



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

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

Answer: C



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142. The term ecosystem was coined by

A. E. warming

B. E.P. Odum

C. A.G. Tansley

D. E. Haeckel

Answer: C



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143. Amount of energy transferred from one trophic level to next is

A. 10 %

B. 90 %

C. 80 %

D. 20 %

Answer: A



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144. Which of the following scientists proposed the concept of ecological food pyramid ?

A. Blackmann

B. Odum

C. Elton

D. Tansley

Answer: C



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145. In the process of plant ecological succession, the final stage is :

- A. Seral stage
- B. Ecesis
- C. Climax community
- D. Competition

Answer: C



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146. A grazing food chain always starts with :

- A. Respiration
- B. Decomposition
- C. Photosynthesis
- D. Nitrogen fixation

Answer: C



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147. Source of energy in an ecosystem is :

A. Fermentation of sugars

B. Decomposition of plants and animals by bacteria

C. Photosynthesis by plants

D. Sunlight

Answer: D



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148. Which of the following gas contributes maximum in global warming ?

A. CH_4

B. CO_2

C. N_2O

D. CFSs

Answer: B



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149. Deforestation generally results in reduction of :

A. Drought

B. Soil erosion

C. Rainfall

D. Global warming

Answer: C



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150. Biomagnifications is due to :

A. Mercury

B. DDT

C. Both (a) and (b)

D. Minerals

Answer: C



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151. In hydrarch, which organism constitute pioneer community ?

- A. Phytoplanktons
- B. Bryophytes
- C. Floating plants
- D. Submerged plants

Answer: A



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152. Primary carnivores are :

- A. Primary producers
- B. Primary consumers
- C. Secondary consumers
- D. Tertiary consumers

Answer: C



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153. Which ecosystem has the maximum biomass

- A. Forest ecosystem
- B. Grassland ecosystem

C. Pond ecosystem

D. Lake ecosystem

Answer: A



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154. Presence of plants arranged into well defined vertical layers depending on their height can be seen best in

A. Tropical Savannah

B. Tropical rain forests

C. Grasslands

D. Temperate forests

Answer: B



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155. A nitrogen - fixing microbe associated with Azolla is :

A. Anabaena

B. Spirullina

C. Tolypothrix

D. Nostoc

Answer: A



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156. In a food chain , deers are :

- A. Primary producers
- B. Primary consumers
- C. Secondary consumers
- D. Decomposers

Answer: B



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157. Which type of pyramid of energy is inverted?

- A. Grassland
- B. Tree
- C. Both (a) and (b)
- D. None of these

Answer: D



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158. Energy transferred from one trophic level to another is

A. 100 %

B. 5 %

C. 10 %

D. 50 %

Answer: C



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159. What type of ecological pyramid would be obtained with the following data ?

Secondary consumer : 120 g

Primary consumer : 60 g

Primary producer : 10 g

- A. Inverted pyramid of biomass
- B. Upright pyramid of numbers
- C. Pyramid of energy
- D. Upright pyramid of biomass

Answer: A



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160. Which of the following organisms are known as chief producers in the oceans ?

- A. Dinoflagellates
- B. Cyanobacteria

C. Diatoms

D. Euglenoids

Answer: C



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161. In a species, the weight of newborn ranges from 2 to 5 kg. 97% of the newborn with an average weight between 3 to 3.3 kg survive whereas 99 of the infants born with weights from 2 to 2.5 or 4.5 to 5 kg die. Which type of selection process is taking place?

A. Directional selection

B. Stabilizing selection

C. Disruptive selection

D. Cyclical selection

Answer: B



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162. A grazing food chain cannot begin in the absence of:

A. Carnivores

B. Herbivores

C. Producers

D. Decomposers

Answer: C



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Competition File Objective Type Questions B Matching Type Questions

1. Match the terms in Column A with Column B :

Column A	Column B
(i) The rate at which organic molecules are formed by a green plant	(a) Secondary productivity
(ii) UV-rays are absorbed	(b) Gross primary productivity
(iii) The rate of increase of biomass of heterotrophs	(c) Ozone layer
(iv) Nitrogen fixation	(d) <i>Azotobacter</i>



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2. Match the terms in Column A with suitable terms in

Column B :

Column A	Column B
(i) <i>Quercus</i>	(a) Crustose lichens stage
(ii) <i>Rhizocarpus</i>	(b) Primary succession
(iii) Succession in water	(c) Ecesis
(iv) Barren land	(d) Forest stage
(v) Establishment of species	(e) Pioneers
(vi) First group of plants in bare area	(f) Xerarch
(vii) Dry area	(g) Hydrosere



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3. Match Column I (Indian forest type) with Column II

(Dominant tree genera) and choose the correct option

:

Column I	Column II
(i) Tropical rainforest	(a) <i>Hopea</i>
(ii) Tropical deciduous forest	(b) <i>Shorea</i>
(iii) Temperate broad-leaved forest	(c) <i>Quercus</i>
(iv) Temperate coniferous forest	(d) <i>Pinus</i>



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4. Match the following with correct combination :

Column I	Column II
(i) <i>Cuscuta</i>	(a) Saprophyte
(ii) <i>Eichhornia</i>	(b) Pneumatophore
(iii) <i>Monotropa</i>	(c) Insectivorous plant
(iv) <i>Rhizophora</i>	(d) Parasite
(v) <i>Utricularia</i>	(e) Root pockets



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5. Match the following with correct combination :

Column I	Column II
A. Earthworm	(i) Catabolism
B. Bacterial and fungal enzymes	(ii) Breaks down detritus into small particles
C. Accumulation of dark coloured amorphous substance	(iii) Detritivore
D. Fragmentation	(iv) Humus



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6. Match the following from column - A with column - B

:

Column A	Column B
(i) Producers	(a) Diatoms
(ii) Decomposer	(b) Plants
(iii) Phytoplanktons	(c) Microorganism
(iv) DNA	(d) Proteins
(v) Histones	(e) Nucleotides



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Competition File Objective Type Questions C Assertion Reason Type Questions

1. Assertion : At climax stage , perfect equilibrium between abiotic and biotic components area cannot be observed.

Reason: This is due to autogenic and allogenic succession.

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

Answer: D



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2. Assertion : The number of pioneers is little . Due to production of disseminules , the pioneers increases in

number . When community is best suited for a community, it stabilizes.

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

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

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: B



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3. Assertion : In crustose lichen stage , by corroding action , soil formation occurs but this action is very slow.

Reason : Crustose lichens produce carbonic acid which corrodes the rock.

A. If both Assertion and Reason are true and

Reason is correct explanation of Assertion.

B. If both Assertion and Reason is not correct

explanation of Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: A



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4. Assertion (A) : Energy pyramid is slopping.

Reason (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 Reason is correct explanation of Assertion.
- B. If both Assertion and Reason is not correct explanation of Assertion.
- C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: A



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5. Assertion : Alpine frosts consist of dwarf shrubs mainly of junipers , silver firs and Rhododendrons.

Reason : Alpine forests occur in Himalayas above the altitude of 3500 metres.

A. If both Assertion and Reason are true and

Reason is correct explanation of Assertion.

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

Answer: A



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6. Assertion : Recycling of materials is must for the maintenance of biosphere .

Reason : Because energy flows unidirctionally in a food chain.

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

Answer: B



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7. Assertion : Nitrogen cycle is a perfect cycle.

Reason : Nitrogen remains in circulation more or less

uniformly.

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

Answer: A



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8. Assertion : CO_2 and methane are called greenhouse gases.

Reason : These - radiate heat and radiations cause global warming.

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

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

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: A



9. Assertion (A) : In a food chain members of successive higher levels are fewer in number.

Reason (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

Reason is correct explanation of Assertion.

B. If both Assertion and Reason is not correct

explanation of Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: B



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10. Assertion (A) : Tropical rain forests are disappearing fast from developing countries such as India.

Reason (R) : No value is attached to these forests because these are poor in biodiversity.

A. If both Assertion and Reason are true and

Reason is correct explanation of Assertion.

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

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: C



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11. Assertion : No two species within a given community can have exactly the same niche.

Reason : The habitat of a species together with the functions forms its niche.

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

Answer: B



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12. Assertion: Red algae contribute in producing coral reef. Itbr. Reason: Some red algae secrete and deposit

calcium carbonate our their walls.

A. If both Assertion and Reason are true and

Reason is correct explanation of Assertion.

B. If both Assertion and Reason is not correct

explanation of Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: A



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13. Assertion (A) : Animals adopt different strategies to survive in hostile environment.

Reason (R) : Praying mantis is green in colour which merges with plant foliage.

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

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

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

Answer: C



14. Assertion: A network of food chain existing together in an ecosystem is known as food web.

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

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

Answer: B



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Chapter Practice Test Section A Multiple Choice Questions

1. Select the decomposers of the ecosystem :

A. Bacteria

B. Fungi

C. Animals

D. Both (a) and (b)

Answer:



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2. Rate of assimilation of food energy by consumers is called :

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

Answer:



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3. What is hydrosere?



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4. An inverted pyramid of biomass can be found in which ecosystem

- A. Forest ecosystem
- B. Marine ecosystem
- C. Grassland ecosystem
- D. Tundra biome

Answer:



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5. Of the total incident solar radiation the proportion of PAR is:

- A. About 50%
- B. About 60%
- C. About 70%
- D. About 80%

Answer:



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6. Select the denitrifying bacterium :

A. Nitrosomonas

B. Nitrobacter

C. Pseudomonas

D. Escherichia coli

Answer:



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1. Define biogeochemical cycle. List two differences between two types of biogeochemical cycles.



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2. What is xerosere?



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3. What is ecosystem?



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4. State the main difference between primary and secondary succession. Give one example of each .

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Chapter Practice Test Section C Short Answer Type li Questions

1. What are benthos?

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2. What are phytoplankton?





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



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4. Define decomposition and describe the processes and products of decomposition.



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Chapter Practice Test Section D Case Based Short Answer Type Questions

1. What are zooplankton?



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2. The organisms deriving their energy from the same energy source are grouped in same trophic level, while a series of trophic levels showing repeating eating and eaten by is called a food chain. These food chains may be predatory or parasitic or saprophytic chains. In an ecosystem, no food chain is independent. Different food chains are interlinked to form a network called

food web. The food webs operate in both aquatic as well as terrestrial ecosystems . Answer the following equations on food chains and food webs :

Why do the organisms of a higher trophic level have less energy available than those of a lower trophic level ?



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3. What is synecology?



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4. With reference to carbon cycle , answer the following :

(a) What are the primary sources of carbon dioxide ?

(b) Why is carbon cycle called a gaseous cycle ?

(c) How are the human activities affecting the carbon cycle ?



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5. What is autecology?



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