



BIOLOGY

BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

ECOSYSTEM

Textual Questions Solved

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

- A. Bacteria
- B. Humus
- C. Organic compounds
- D. Inorganic compounds

Answer: B

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2. Which of the following is / are not a natural ecosystem?

- A. Forest ecosystem
- B. Rice field
- C. Grassland ecosystem
- D. Desert ecosystem

Answer: B

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3. Pond is a type of

- A. Forest ecosystem
- B. grassland ecosystem
- C. marine ecosystem
- D. fresh water ecosystem

Answer: D

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4. Pond ecosystem is

- A. not self sufficient and self regulating
- B. partially self sufficient and self regulating
- C. self sufficient and not self regulating
- D. self sufficient and self regulating

Answer: D

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5. Profundal zone is predominated by heterotrophs in pond ecosystem because of.....

- A. with effective light penetration
- B. no effective light penetration
- C. complete absence of light
- D. a and b

Answer:

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6. Solar energy used by green plants for photosynthesis is only

- A. 2-8%
- B. 2-10%
- C. 3-10%
- D. 2-9%

Answer: B



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7. Which of the following ecosystem has the highest primary productivity?

- A. Pond ecosystem

- B. Lake ecosystem
- C. Grassland ecosystem
- D. Forest ecosystem

Answer: C

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8. Ecosystem consists of

- A. (A) decomposers
- B. (B) producers
- C. (C) consumers
- D. (D) all of the above

Answer: D

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9. Which one is in descending order of a food chain ?

- A. Producers → Secondary consumers → Primary consumers → Tertiary consumers
- B. Tertiary consumers → Primary consumers → Secondary consumers → Producers
- C. Tertiary consumers → Secondary consumers → Primary consumers → Producers
- D. Tertiary consumers → Producers → Primary consumers → Secondary consumers

Answer: C

10. What is the significance of food web?

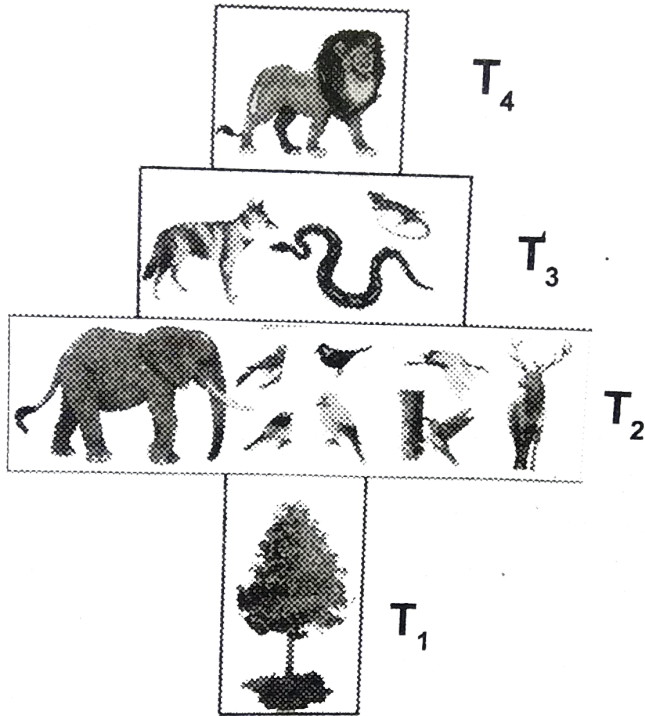
- A. it does not maintain stability in nature
- B. it shows patterns of energy transfer
- C. it explains species interaction
- D. b and c

Answer: D



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11. The following diagram represents



- A. pyramid of number in a grassland ecosystem
- B. pyramid of number in a pond ecosystem
- C. pyramid of number in a forest ecosystem
- D. pyramid of biomass in a pond ecosystem

Answer: C

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12. Which of the following is not true?

- A. Eluviation
- B. Catabolism
- C. Anabolism
- D. Fragmentation

Answer: C

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13. Which of the following is not a sedimentary cycle?

A. Nitrogen cycle

B. Phosphorous cycle

C. Sulphur cycle

D. Calcium cycle

Answer: A



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14. Which of the following are not regulating services of ecosystem services?

i) Genetic resources

ii) Recreation and aesthetic values

iii) Invasion resistance

iv) Climatic regulation

A. (A) i and iii

B. (B) ii and iv

C. (C) i and ii

D. (D) i and iv

Answer: C

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15. Productivity of profundal zone will be low. Why ?

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16. Discuss the gross primary productivity is more efficient than net primary productivity.

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17. Pyramid of energy is always upright. Give reasons.

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18. What will happen if all producers are removed from ecosystem?

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19. Construct the food chain with the following data.

Hawk, plants, frog, snake, grasshopper.

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20. What is the significance of food web?

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21. Shape of pyramid in a particular ecosystem is always different in shape.Explain with Example.

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22. Generally human activities are against to the ecosystem, where as you a student how will you help to protect ecosystem?

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23. Write a note on the types of succession.

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24. Draw a pyramid from following details and explain in brief. Quantities of organisms are given-Hawks-50, plants-1000.rabbit and mouse-250 + 250, pythons and lizard - 100 + 50 respectively.

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25. Various stages of succession are given bellow. From that rearrange them accordingly. Find out the type of succession and explain in detail.

Reed-swamp stage, phytoplankton stage, shrub stage, submerged plant stage, forest stage, submerged free floating stage and marsh meadow stage.

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Additional Questions 1 Mark Questions

1. Ecosystem is the structural and functional unit of ecology. This statement was given by..... .

A. (A) Tansley

B. (B) Odum

C. (C) Charles

D. (D) Edwin

Answer: B

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2. Identify the incorrect option among the following component sequence.

A. (A) air, water, sunlight and temperature

B. (B) latitude, altitude, direction of mountain and aptitude

C. (C) soil air, pH of soil, saltwater and soil moisture

D. (D) carbohydrate, protein, lipids and humic substances

Answer: B



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3. Pick out the edaphic factor among the following.

A. a) Rain fall

B. b) Temperature

C. c) Soil pH

D. d) Latitude

Answer: C



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4. Match the column I with column II

Column I

Column II

- | | |
|-----------------------|----------------------|
| a. Climatic factor | (i) humic substances |
| b. Edaphic factor | (ii) precipitation |
| c. Topographic factor | (iii) pH of soil |
| d. Organic factor | (iv) Altitude |

A. a) a-ii, b-iii, c-iv, d-i

B. b) a-iii, b-iv, c-i, d-iii

C. c) a-i, b-iii, c-ii, d-iv

D. d) a-iv, b-i, c-iii, d-ii

Answer: A



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5. Which is not a macro consumer?

- A. a) Herbivore
- B. b) Carnivore
- C. c) Ominivore
- D. d) Decomposer

Answer: D

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6. Photosynthetically Active Radiation ranges between the wavelength of..... .

- A. a) 400-600 nm
- B. b) 600-700 nm
- C. c) 400-500 nm
- D. d) 400-700 nm

Answer: D

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7. Define ecosystem.

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8. Identify the incorrect statement.

A. Carbon stored in oil is referred as Grey carbon

B. Carbon stored in atmosphere is referred as Blue carbon

C. Carbon stored in industrialized forests is referred as Green carbon

D. Carbon emitted from gas, died engine is referred as Black carbon

Answer: C



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9. Which group of organism occupies the third trophic level in an ecosystem?

- A. a) Primary consumers
- B. b) Secondary consumers
- C. c) Secondary carnivores
- D. d) Omnivores

Answer: B



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10. Which is irrelevant to the first law of thermodynamics?

- A. (A) Energy can be transmitted from one system to to Other in many forms.
- B. (B) Energy transformation results in reduction of free energy.
- C. (C) Energy can neither be created nor be destroyed.
- D. (D) Energy in the universe is constant.

Answer: B

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11. If 1200 Joules of solar energy is trapped by producers, how much of joules of energy does the organism in the third tropic level will receive?

A. 120 Joules

B. 12 Joules

C. 1.2 Joules

D. 0.12 Joules

Answer: C



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12. Which of the following food chain is in proper sequence?

A. a) Plants → snake → rabbit → eagle

B. b) Plants → grasshopper → lizard → snake → hawk

C. c) Plants → lizard → rabbit → snake → eagle

D. d) Plants → rabbit → lizard → hawk → eagle

Answer: B



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

- A. (a) Productivity
- B. (b) Conductivity
- C. (c) Energy flow
- D. (d) Decomposition

Answer: B



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14. The upright pyramid is not a feature of..... .

- A. (a) Pond ecosystem
- B. (b) grassland ecosystem
- C. (c) Forest ecosystem
- D. (d) Lake Ecosystem

Answer: A



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15. The type of ecosystem with maximum net primary productivity is..... .

- A. (a) Desert ecosystem
- B. (b) Deciduous forest ecosystem

C. (c) Tropical rain forest ecosystem

D. (d) Grassland ecosystem

Answer: C

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16. Pyramid of energy is always upright. Give reasons.

A. High population of old individuals

B. Low population of young individuals

C. High population of young individuals

D. Low population of old individuals

Answer: B

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17. Spindle shaped pyramid is a character of

- A. Pond ecosystem
- B. grassland ecosystem
- C. Parasite ecosystem
- D. Forest ecosystem

Answer: D



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18. Read the statement and select the correct terminology for the same:

"Carrying away of inorganic compounds of soil by water".

- A. Eluviation

B. Fragmentation

C. Humification

D. Mineralisation

Answer: A



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19. Complete the food chain by filling the link X:

Paddy → Grasshopper → Frog → X → Hawk

A. King cobra

B. Gorilla

C. Rabbit

D. Tasmanial wolf

Answer: A



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20. Which of the following is abundant in rock deposits and guano?

- A. Nitrogen
- B. Phosphorous
- C. Oxygen
- D. Calcium

Answer: B



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21. The bottom most zone of a pond is termed as..... .

A. a) Limnetic zone

B. b) Littoral zone

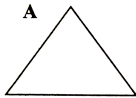
C. c) Benthic zone

D. d) Profundal zone

Answer: C

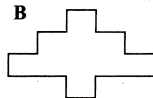
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22. Observe the figures and select the correct option indicating the correct type of pyramid of numbers.



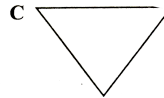
A

- (a) Grassland ecosystem
- (b) Grassland ecosystem
- (c) Forest ecosystem
- (d) Pond ecosystem



B

- Forest ecosystem
- Pond ecosystem
- Grassland ecosystem
- Forest ecosystem



C

- Parasite ecosystem
- Forest ecosystem
- Parasite ecosystem
- Grassland ecosystem

A.

Grassland ecosystem Forest ecosystem Parasite ecosystem

B.

Grassland ecosystem Pond ecosystem Forest ecosystem

C.

Forest ecosystem Grassland ecosystem Parasite ecosystem

D.

Pond ecosystem Forest ecosystem Grassland ecosystem

Answer: A



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23. Lotic ecosystem is associated with :

A. Open water ecosystem

- B. Running water ecosystem
- C. Standing water ecosystem
- D. Ocean water ecosystem

Answer: B



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24. Identify the correct sequence of various zones from surface to depth in a pond ecosystem

- A. a) Profundal, Limnetic, littoral and benthic
- B. b) Benthic, littoral, profundal and limnetic
- C. c) Limnetic, profundal, littoral and benthic
- D. d) Littoral, limnetic, profundal and benthic

Answer: D



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25. Which type of ecosystem service does the genetic resources comes under?

- A. (a) Provisioning services
- B. (b) Supporting services
- C. (c) Regulating services
- D. (d) Cultural services

Answer: A



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26. Assertion (A): Pyramid of energy transfer is upright.

Reason (R): During the energy transfer at successive trophic levels

from producers there will be gradual decrease

- A. Both A and R are wrong
- B. A is right R is wrong
- C. R explains A
- D. A is right R is not the correct explanation for A

Answer: C



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27. Assertion (A): In forest ecosystem, the pyramid of number is spindle shaped.

Reason (R): Tropical (T1) of the pyramid occupies large trees which are maximum in number

- A. (a) Both A and R are wrong

B. (b) A is right R is wrong

C. (c) R explains A

D. (d) A is right R is not the correct explanation for A

Answer: B



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28. Species that indicates the health of the ecosystem are called as..... .



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29. Plant succession initiating in sand _____.

A. a) Hydrosere

B. b) Psammosere

C. c) Halosere

D. d) Lithosere

Answer: B



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30. Match the column I with column II

Column I

Column II

a. Lithosere

(i) Succession initiating on saline water

b. Psammosere

(ii) Succession initiating on desert area

c. Halosere

(iii) Succession initiating on barren rock

d. Xerosere

(iv) Succession initiating on sand

A. a-iii, b-iv, c-i, d-ii

B. a-i, b-iv, c-ii, d-iii

C. a-i, b-iii, c-ii, d-iv

D. a-iv, b-i, c-iii, d-ii

Answer: A

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31. Statement (I): Allogenic succession occurs as a result of abiotic factors.

Statement (II): Autogenic succession occurs as result of biotic factors.

A. (a) Statement I is correct , Statement II is incorrect.

B. (b) Statement I is incorrect , Statement II is correct

C. (c) Both Statements I and II are correct.

D. (d) Both Statements I and II are incorrect

Answer: C

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32. Statement (I): The first invaded plants in a barren area are called as pioneers.

Statement (II): Marsh meadow stage of hydrosere succession is also called as amphibious stage.

- A. Statement I is correct , Statement II is incorrect.
- B. Statement I is incorrect , Statement II is correct
- C. Both Statements I and II are correct.
- D. Both Statements I and II are incorrect

Answer: A

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33. is the climax community of hydrosere.

- A. Reed swamp stage
- B. Marsh meadow stage
- C. Shrub stage
- D. Forest stage

Answer: D

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Additional Questions 2 Mark Questions

1. According to A.G. Tansley, what is an ecosystem?

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2. Name the climatic factors that affect plant life.

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3. Define 'Standing state' with regard to ecosystem.

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4. What are biotic components?

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5. Name the macro consumers and micro consumers.

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6. How will you define decomposers?

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7. What is standing crop?

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8. What do you mean by PAR? Mention its significance.

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9. Point out the factors that affect the photosynthetically active radiation.

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10. Define Grey carbon and Black carbon

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11. What is meant by productivity of an ecosystem?

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12. How Net Primary Productivity can be derived?

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13. Expand GPP and define it.

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14. Write the name of four important aspects of ecosystem.

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15. State the role of herbivores and microconsumers in a terrestrial ecosystem.

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16. Name the category of organisms that occupy the first tropic level (T_1) and fourth tropic level (T_4) in an ecosystem.

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17. What is Energy?

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18. State the first law of thermodynamics.

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19. Explain ten percent law with an example.

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20. Which one is in descending order of a food chain ?

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21. Name the two types of food chain.

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22. The compounds in which the carbon atoms are linked in a linear pattern to form the chain are known as _____.

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23. Rearrange the components of the ecosystem and frame a food chain. Also mention the type of food chain.

Hawk, Earthworm, Animal excreta and Black bird.

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24. What is the significance of food web?

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25. What is Eltonian pyramid?

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26. Why do we obtain an inverted pyramid in a parasite ecosystem?

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27. What is a pyramid?

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28. Biogeochemical cycle comprises both gaseous cycle and sedimentary cycle. How they differ from one another?

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29. Name the type of ecosystem that exhibits the following types of pyramid.

(a) Inverted pyramid of biomass (b) Spindle shaped pyramid of number

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30. Cite few examples of biomolecules that contain phosphorus.

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31. What are Blue carbon ecosystems?

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32. Mention the four categories of ecosystem services.

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33. What is meant by Ecosystem resilience?

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34. Ecosystem management - comment on the statement.

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35. is the climax community of hydrosere.

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36. Write about the significance of plant succession.

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37. Define (a) Hydrosere (b) Xerosere

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Additional Questions 3 Mark Questions

1. What is secondary productivity? Explain its types.

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2. List the factors affecting primary productivity.

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3. Give an account on the concept of trophic level in an ecosystem.



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4. State the second law of thermodynamics.



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5. Explain Grazing food chain with example.



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6. Write a brief note on Detritus food chain.



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7. What is the significance of food web?

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8. Name the types of ecological factors.

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9. Spindle shaped pyramid is a character of

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10. Pyramid of energy is always upright. Give reasons.

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11. What is meant by Eluviation?

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12. What is biogeochemical cycle? Explain its types.

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13. (i) Which type of bio - geochemical cycle is carried out by phosphorus?

(ii) Mention the sources of phosphorus in an organisms.

(iii) Explain the mechanism of phosphorus cycle.

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14. Discuss the three zones of a lentic ecosystem.

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15. What is ecosystem services? Why it is of much importance?

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16. Point out any three mangrove ecosystem services.

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17. What are the human activities that disturb an ecosystem?

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18. What is primary succession?



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Additional Questions 5 Mark Questions

1. Describe the various stages of decomposition process

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2. Give a detailed account of Biotic and abiotic components of a pond ecosystem .

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3. (b) Enlist the strategies of eco system management?

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4. List out the characteristics of ecological succession.

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5. Differentiate Primary succession and Secondary succession.

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6. (a) Enumerate the advantages of Artificial seeds.

(b) Write in detail about Autogenic succession and Allogenic succession.

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7. Write about the significance of plant succession.

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Higher Order Thinking Skills Hots Questions

1. Nutrients are retained in the ecosystem. Discuss how and name the process through which it is achieved?

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2. According to ten percent law, how many Joules of energy does the individuals at the fourth level will receive, if the individuals at first trophic level receives 1000 Joules of energy?

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3. Frame any two chain patterns from the given organisms. Each chain must contain a minimum of four organisms.

Diatoms, Hawk, Rabbit, Vallisneria

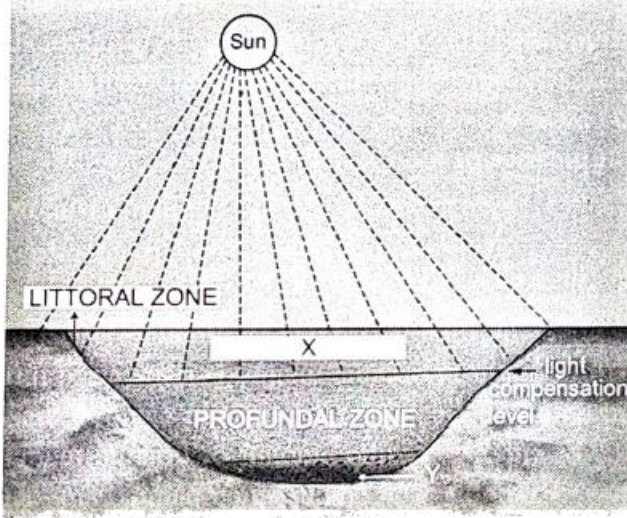
Stoke, guppies, grass, snake, large fishes, grasshopper, crane.

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4. Mention any two vital biomolecules that requires phosphorous for their biosynthesis.

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5. The below diagramatic sketch shows the stratification of pond ecosystem. Considering it, name X and Y.



Diagrammatic sketch shows stratification of Pond ecosystem

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