

BIOLOGY

BOOKS - SURA BIOLOGY (TAMIL ENGLISH)

ECOSYSTEM

Evaluation

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

A. Bacteria

B. Humus

C. Organic compounds

D. Inorganic compounds

Answer: A::C::D



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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: C::D



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3. Pond is a type of

A. forest ecosystem

B. grassland ecosystem

C. marine ecosystem

D. fresh water ecosystem

Answer: A::C



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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: A::C::D



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

A. with effective light penetration

B. no effective light penetration

C. complete absence of light

D. a and b

Answer: A::C



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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: A::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. decomposers

B. producers

C. consumers

D. all of the above

Answer: A::B::C::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: A::C::D



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10. Significance of food web is / are

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: A::B::C::D



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11. Which of the following is / are not the mechanism of decomposition?

A. Eluviation

B. Catabolism

C. Anabolism

D. Fragmentation

Answer: A::B



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

A. Nitrogen cycle

B. Phosphorous cycle

C. Sulphur cycle

D. Calcium cycle

Answer: C



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13. 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. i and iii

B. ii and iv

C. i and ii

D. i and iv

Answer: A:D



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14. Productivity of profundal zone will be low

Why?



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



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



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



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18. Construct the food chain with the following data.

Hawk, plants, frog, snake, grasshopper.



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19. Name of the food chain which is generally present in all type of ecosystem. Explain and write their significance.



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



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



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22. Generally in summer the forest are affected by natural fire. Over a period of time it recovers itself by the process of successions. Find out the types of succession and explain.



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23. 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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24. 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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Botany Long Version Questions For Pure Science Group Long Version Evaluation

1. Write some plants are found in sub alpine forest.



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Additional Questions And Answers I Chosse The Correct Answers

1. The term 'Ecosystem' was proposed by_____.

A. S. A. Forbes

B. Vernadsky

C. A. G. Tansley

D. Odum

Answer: C



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2. Carbon stored in industrialized forests is called

A. Black Carbon

B. Green Carbon

C. Grey Carbon

D. Brown Carbon

Answer: D



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3. Which one of the following is called artificial ecosystem

A. Rice field

B. Maize field

C. Pond

D. Both a and b

Answer: D



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4. TDP stands for _____.

- A. Tropical dry evergreen forests
- B. Total dry evergreen forests
- C. Tamilnadu dry evergreen forests
- D. Throughout dry evergreen forests

Answer: A



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5. Arrange in order based on process of succession.

(i) Climax (ii) Competition (iii) Reaction

(iv) Invasion (v) Nudation (vi) Ecesis

A. Nudation, Invasion, Ecesis, Aggregation,

Competition, Reaction, Climax

B. Invasion, Aggregation, Competition,

Ecesis, Nudation, Reaction, Climax

C. Climax, Competition, Reaction, Invasion,
Nudation, Ecesis

D. Aggregation, Climax, Competition,
Nudation, Invasion, Reaction, Ecesis

Answer: A



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6. Plants such as Albizzia, Acacia and Capparis
are the examples of tropical

A. Grass lands

B. thorn forests

C. deciduous forests

D. evergreen forests

Answer: B



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7. Storage of energy by consumers per unit area per unit time after respiratory loss is _____.

A. Net Primary Productivity

B. Gross Secondary Productivity

C. Net Secondary Productivity

D. Gross Primary Productivity

Answer: C



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

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

Answer: D



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9. Which of the following is expected to have the highest value ($\text{gm}^{-2}\text{yr}^{-1}$) in a grassland ecosystem?

- A. Tertiary production
- B. Gross production
- C. Net production
- D. Secondary production

Answer: B



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10. Which one of the following ecosystem has the highest annual net primary productivity?

(i) Temperate deciduous forest

(ii) Tropical rain forest

(iii) Tropical deciduous forest

(iv) Temperate evergreen forest

A. i

B. ii

C. iii

D. iv

Answer: ii



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

- A. Forests
- B. grasslands
- C. agroecosystem
- D. Oceans

Answer: D



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12. Which one of the following organism occupies more than one trophic level in a pond ecosystem?

A. Fish

B. Zooplankton

C. Frog

D. Phytoplankton

Answer: A



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13. Amount of living matter at a trophic level in an area at any time is called

A. Standing state

B. Standing crop

C. Detritus

D. Humus

Answer: B



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14. Which one of the following animals may occupy more than one trophic levels in the same ecosystem at the same time?

A. Frog

B. crow

C. Lion

D. Goat

Answer: B



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15. The upright pyramid of number is absent in

A. Lake

B. Grassland

C. Pond

D. Forest

Answer: D



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16. Which one the following is not a sedimentary biogeochemical cycle in ecosystem?

A. Calcium

B. Carbon cycle

C. Sulphur cycle

D. Phosphorus cycle

Answer: B



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

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

Answer: B



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18. Identify the possible link "A" in the following food chain

Plant → Insect → Frog → "A" → Eagle

A. Cobra

B. Parrot

C. Rabbit

D. Eagle

Answer: A



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19. 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. 0.02 J

B. 2.5 J

C. 5 J

D. 0.0002 J

Answer: A



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20. Secondary succession takes place on/in

- A. bare rock
- B. degraded forest
- C. newly created pond
- D. barren lands

Answer: B



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21. PAR is between the range of

A. 400 - 600 nm

B. 300 - 600 nm

C. 400 - 700 nm

D. 200 - 700 nm

Answer: C



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22. _____ defined ecosystem as the structural and functional unit of ecology.

A. Tansley

B. Odum

C. Forbes

D. Karl Mobius

Answer: B



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23. Carbon stored in fossil fuel is called _____

- A. blue carbon
- B. black carbon
- C. green carbon
- D. grey carbon

Answer: D



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24. Ten percent law was proposed by_____

A. Elton

B. Thienemann

C. Lindeman

D. Odum

Answer: C



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25. _____ is a lentic ecosystem.

A. pond

B. stream

C. seas

D. rivers

Answer: A



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26. _____ is a blue carbon ecosystem.

A. Ocean

B. Forest

C. Lakes

D. Mangroves

Answer: D



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27. _____ is a primary consumer in pond ecosystem.

A. Nelumbo

B. Pistia

C. Daphnia

D. Salvia

Answer: C



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Additional Questions And Answers Iii Choose The Correct Statements

1. "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.

A. I and II

B. II and III

C. III and IV.

D. I and IV

Answer: B



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2. (I) Pyramid of Number of forest ecosystem is different in shape.

(II) The base (T) of the pyramid occupies large sized trees

(III) Tertiary consumers are greater in number than the secondary consumer.

(IV) The pyramid of number in forest ecosystem looks spindle shaped.

A. I, II and III

B. I, II and IV

C. II and IV

D. IV only

Answer: B



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3. "Decomposer"

(I) They are also called as microconsumers.

(II) They help to recycle the nutrients in the ecosystem.

(III) Decomposer enrich the nutrients in the pond ecosystem.

(IV) It is an artificial process.

A. I, II and III

B. I, II and IV

C. II and IV

D. IV only

Answer: A



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4. “Phosphorous cycle”

(I) It is a type of sedimentary cycle.

(II) Phosphorus is found in the biomolecules like DNA.

(III) Phosphorus is not abundant in the biosphere

(IV) Bulk quantity of phosphorus is present in rock.

A. I, II and III

B. I, II, III and IV

C. II and IV

D. IV only

Answer: B



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5. "Pyramid"

(I) Pyramid of energy is a graphical model of energy flow in a community.

(II) Energy pyramid begin with producers at the bottom

(III) Pyramid of energy is always upright.

(IV) Energy pyramid is always inverted in shape.

A. I, II and III

B. I, II, III and IV

C. II and IV

D. IV only

Answer: A



Additional Questions And Answers Iv Choose The Incorrect Statements

1. (a) Primary succession takes a very long time for the occurrence in any region.
- (b) Secondary succession takes less time.
- (c) Forest destroyed by fire is an example for primary succession,
- (d) The development of plant community in a barren area is primary succession.





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2. Accumulation of humus damage the minerals in the soil.

(b) Forest stage is the climax community of Hydrosere.

(c) Lithosere is a type of xerosere.

(d) Secretion of acids by lichens enhance the weathering of rock.



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3. "Beach forest"

(a) Found all along the sea coasts and river deltas.

(b) These areas have sandy soil.

(c) Consists of large amount of lime and salts.

(d) Rich in nitrogen and other mineral nutrients.



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**Additional Questions And Answers V Assertion
And Reason**

1. Assertion (A): Autotrophic components manufacture food from simple inorganic substance.

Reason (R) : Autotrophs create energy through a process called photosynthesis.

A. Assertion is true and Reason is correct explanation of Assertion,

B. Assertion and Reason is true but Reason is not correct explanation of Assertion.

C. Assertion is true and Reason is false.

D. Both Assertion and Reason are false.

Answer: A



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2. Assertion (A): Consumers consume the producer.

Reason (R) : Producers decompose the dead plants.

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

Answer: B



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3. Assertion (A) : Blue carbon is stored in the atmosphere and oceans. **Reason (R) :** It is lost from the ecosystem.

A. Assertion is true and Reason is correct explanation of Assertion,

B. Assertion and Reason is true but Reason is not correct explanation of Assertion.

C. Assertion is true and Reason is false.

D. Both Assertion and Reason are false.

Answer: B



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4. Assertion (A): Omnivores eat both plants and animals.

Reason (R) : These organisms may occupy more than one trophic level in the food chain.

A. Assertion is true and Reason is correct explanation of Assertion,

B. Assertion and Reason is true but Reason is not correct explanation of Assertion.

C. Assertion is true and Reason is false.

D. Both Assertion and Reason are false.

Answer: A



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5. Assertion (A) : Transfer of food energy from one trophic level to other is based on ten percent law.

Reason (R) : Only about 10% is stored at every level and rest of them (90%) is lost.

A. Assertion is true and Reason is correct explanation of Assertion,

B. Assertion and Reason is true but Reason is not correct explanation of Assertion.

C. Assertion is true and Reason is false.

D. Both Assertion and Reason are false.

Answer: A



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6. Assertion (A): The pyramid of number in a parasite ecosystem is always upright.

Reason (R) : It starts with a grassland.

A. Assertion is true and Reason is correct explanation of Assertion,

B. Assertion and Reason is true but Reason is not correct explanation of Assertion.

C. Assertion is true and Reason is false.

D. Both Assertion and Reason are false.

Answer: D



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Additional Questions And Answers Vi Choose The Correct Pair

- 1.
- (a) Benthic — Bottom zone of the pond
 - (b) Riparian vegetation — Lakes and ponds
 - (c) Deciduous forest — Heavy rainfall
 - (d) Grassland — Himalayas



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2. (a) Alpine-scrub - 2900 m - 3500 m

(b) Sub-Alpine forests - 4000 m - 5000 m

(c) Rolling grassland - Shola

(d) Higher altitude grasslands - Above 2000 m



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3. (a) Net primary productivity - Apparent photosynthesis

(b) Community productivity - Respiration

(c) Primary productivity - Biomass

(d) Gross primary productivity - Storage of biomass



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Additional Questions And Answers Vii Choose The Incorrect Pair

1. Autogenic succession - Biotic factors

(b) Allogenic succession - Abiotic factors

(c) Autotrophic succession - Bacteria fungi

(d) Heterotrophic succession - Organic habitats



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2. (a) Phytoplankton stage - Green algae

(b) Submerged plant stage - Loose mud

(c) Reed-swamp stage - Amphibious stage

(d) Marsh in meadow stage - Shrub stage



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3. (a) Foliose lichen - Parmelia

(b) Lithosere - Saline water

(c) Crustose lichens - Rhizocarpon

(d) Psammosere - Sand



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4. (a) Nudation

(b) Decomposition

(c) Aggregation

(d) Ecesis



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5. (a) Nelumbo

(b) Typha

(c) Benthos

(d) Azolla



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**Additional Questions And Answers Viii Find The
Odd Man Out And Give Reason**

1. (a) Rhizocarpon

(b) Lecariora

(c) Parmelia

(d) Sonneratia



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Answer In One Word

1. Carbon stored in the biosphere _____.



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2. Carbon stored in the atmosphere

_____.



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3. Meaning of the word 'Trophic' _____.



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4. Animals which eat both plants and animal_____.



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5. Energy stored in starch_____.



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6. Amount of organic matter in a ecosystem
_____.



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7. Movement of decomposed, water soluble organic and inorganic compounds from surface to lower layer of soil _____.



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8. Study of inland fresh water aquatic system _____.



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9. First invaded plants in a barren area _____.



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10. Plant succession initiating in sand _____.



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1. What is standing state?



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2. What are consumers?



[Watch Video Solution](#)

3. What are autotrophs?



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4. What are producers?



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5. Define standing crop.



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6. Write the functions of ecosystem.



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7. Define productivity.



Watch Video Solution

8. Define decomposition.



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9. What is biogeochemical cycle?



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10. Mention the types of biogeochemical cycles.



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11. Write the name of two major components of Ecosystem.



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12. Who introduced the concept of ecological Pyramids? Write the other name of ecological Pyramids.



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13. Define Limnology.



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14. Name the common plants present in fresh water swamp forests.



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15. How many types of forest vegetation are seen in India?



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16. What are Anthropogenic grasslands?



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17. How did odum define 'ecosystem'?



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18. What is PAR?



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19. State the second law of thermodynamics in terms of entropy.



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20. State the ten percent law.



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21. What is a food chain?



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22. What is detritus food chain?



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23. Define a ecological pyramid.



Watch Video Solution

24. Define oceanography.



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25. What is a flagship species?



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26. Draw a food web.



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[Short Answers](#)

1. Write the types of Carbon.



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2. Write about the factors affecting primary productivity.



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3. What is food-web?



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4. List the anthropogenic activities which affect ecosystem.



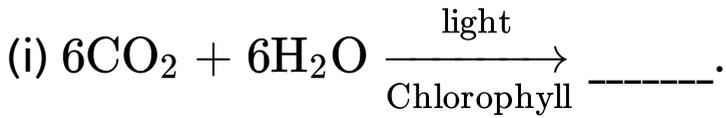
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5. Write the difference between Macro consumers and Micro consumers.



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6. Complete the equation



(ii) light energy converted into _____.



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7. What is the significance of food web?



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8. Define leaching / Eluviation.



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9. Define humification.



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10. What is mineralisation?



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11. How are aquatic ecosystem classified?



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12. What are blue carbon ecosystem?



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13. List the benefits of Mangroves ecosystem services.



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14. How are ecosystem services classified? Give examples for each?



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15. Write a few sentences about Adayar poonga.



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16. What is plant succession?



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17. List the causes of succession.



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18. Compare primary and secondary succession.



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19. What is heterotrophic succession?



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20. What is Nudation?



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21. Name the two geographic zones in Tamilnadu.



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22. What is Riparian vegetation?



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23. Name the forest types in Tamilnadu.



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24. Give the outline classification of plant succession.



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25. What is Ecesis?



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26. What is climax community?



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27. Define carbon cycle.





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Long Answers

1. Write the classification of productivity of an ecosystem.



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2. First law of thermodynamics corresponds to



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3. Write about the significance of plant succession.



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4. Explain in detail about the process of succession.



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5. Write a note on the types of succession.



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Unit Test I Choose The Correct Answer

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

- A. Forest ecosystem
- B. Rice field

C. Grassland ecosystem

D. Desert ecosystem

Answer:



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2. 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. i and iii

B. i and iv

C. i and iii

D. i and iv

Answer:



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3. The term 'Ecosystem' was proposed by_____.

A. S. A Forbes

B. Vernadsky

C. A. G. Tansley

D. Odum

Answer:



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4. Identify the possible link "A" in the following food chain

Plant → Insect → Frog → "A" → Eagle

A. Cobra

B. Parrot

C. Rabbit

D. Eagle

Answer:



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

A. 2 - 8%

B. 2-10%

C. 3 - 10%

D. 2 - 9%

Answer:



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6. Assertion (A): Autotrophic components manufacture food from simple inorganic substance.

Reason (R) : Autotrophs create energy through a process called photosynthesis.

A. Assertion is true, reason is false

B. Assertion is false , reason is true

C. Both assertion and reason are not true

D. Both assertion and reason are true

Answer:



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7. Choose the incorrect statement(s)

A. The bottom of the pyramid is occupied by the producers in pond ecosystem

B. The pyramid of biomass is always inverted in shape.

C. Biomass decreases at each ascending level of food chain.

D. Biomass increases at each ascending level of food chain.

Answer:



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8. Ecosystem consists of

A. decomposers

B. producers

C. consumers

D. all of the above

Answer:



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9. Arrange in order based on process of succession.

(i) Climax (ii) Competition (iii) Reaction

(iv) Invasion (v) Nudation (vi) Ecesis

A. Nudation, Invasion, Ecesis, Aggregation,
Competition, Reaction, Climax.

B. Invasion, Aggregation, Competition,
Ecesis, Nudation, Reaction, Climax

C. Climax, Competition, Reaction, Invasion,
Nudation, Ecesis

D. Aggregation, Climax, Competition,
Nudation, Invasion, Reaction, Ecesis

Answer:



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Unit Test Ii Very Short Answer

1. First law of thermodynamics corresponds to



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2. What is a pyramid?



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Unit Test Iii Short Answer

1. Write the types of Carbon.



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2. What is food-web?



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Unit Test Iv Long Answer

1. (b) What are the significance of plant succession?



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