



BIOLOGY

BOOKS - A2Z BIOLOGY (HINGLISH)

ECOSYSTEM

Section A Topicwise Questions Topic 1 Ecosystem Structure And Function

1. The functional unit of nature is called

A. Community

B. Ecosystem

C. Population

D. Succession

Answer: B



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2. Living organisms interact among themselves and also with the surrounding physical environment , and form

A. Community

B. Ecosystem

C. Population

D. Succession

Answer: B



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3. Which of the following is an ecosystem ?

A. A small pond

B. A large forest

C. A sea

D. All of the above

Answer: D



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4. The composite of all local ecosystems on Earth is regarded to as a/an

A. International ecosystem

B. Universal ecosystem

C. Global ecosystem

D. Both A and B

Answer: C



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5. Global ecosystem is too much big and complex to be studied at one time, it is convenient to divide it into two basic organisms , namely the

A. Natural and man-made ecosystems

B. Biotic and abiotic ecosystems

C. Terrestrial and aquatic ecosystems

D. Both A and B

Answer: C



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6. Match the columns I and II and choose the correct combination from the options given.

Column I	Column II
a. Forest	1. Terrestrial ecosystem
b. Estuary	2. Aquatic ecosystem
c. Grassland	3. Man-made ecosystem
d. Wetland	
e. Aquarium	

A. a-1,b-2,c-1,d-1,e-3

B. a-1,b-1,c-2,d-2,e-3

C. a-3,b-2,c-1,d-1,e-2

D. a-1,b-2,c-1,d-2,e-3

Answer: D



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7. Physical structure, that is characteristic for each type of ecosystem , is formed due to the

A. Interaction of biotic and abiotic components

B. Vertical distribution of different species

C. Stratification

D. Both B and C

Answer: A



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8. In an ecosystem, the species composition is determined by

(a) Identification of plant species

(b) Identification of animal species.

(c) Enumeration of plant species

(d) Enumeration of animal species

A. a and b

B. c and d

C. a and c

D. a , b , c, and d

Answer: D



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9. Which is incorrect about a small pond ecosystem ?

A. This is fairly a self-sustainable unit.

B. All the four basic components of an ecosystems are well exhibited.

C. The biotic component is the water with all the dissolved organic and inorganic substances and the rich soil deposit at the bottom of the pond.

D. This ecosystem performs all the functions of any ecosystem except the unidirectional flow of energy.

Answer: D



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10. In a pond ecosystem the rate of function of entire pond is regulated by

A. The solar input

B. The cycle of temperature

C. Day -length and other climatic conditions

D. All of above

Answer: D



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11. The functional components of the ecosystem are

- a. Productivity b. Decomposition
- c. Nutrient cycling d. Energy flow
- e. Succession f. Stratification

A. a,b and c

B. a,b,c and d

C. a,b,c,d and e

D. a,b,c,d,e and f

Answer: B



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12. The autotrophic components of the pond ecosystem include

A. Phytoplanktons

B. Some algae

C. Floating , submerged and marginal plant

found at the edges

D. All of above

Answer: D



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13. The consumers of a pond ecosystem are represented by

- A. Zooplanktons
- B. Free-swimming forms
- C. Bottom- dwelling forms
- D. All of above

Answer: D



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14. The decomposers of the pond ecosystem are

A. fungi

B. Bacteria

C. Flagellates

D. All of the above

Answer: D



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15. Match the columns I and II and choose the correct combination from the options given.

	Column I	Column II
a.	Trees	1. Bottom layer
b.	Herbs	2. Second layer
c.	Shrubs	3. Top vertical strata or layer
d.	Grasses	

A. a-1,b-2,c-3,d-2

B. a-3,b-2,c-1,d-1

C. a-3,b-1,c-2,d-2

D. a-3,b-1,c-2,d-1

Answer: D



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16. In the pond ecosystem , decomposers are especially abundant

A. At the surface of the pond

B. In the bottom of the pond

C. At the edges of the pond

D. All of the above

Answer: B



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17. Lentic ecosystem occurs in

- A. Rain water
- B. Running water
- C. Standing water
- D. Gravitational water

Answer: C



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18. Open water zone beyond littoral zone is

A. Limentic zone

B. Coastal zone

C. Profundal zone

D. Benthic zone

Answer: A



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19. Boitic components of an ecosystem include

A. Producers , consumers and decomposers

B. Producers and consumers

C. producer only

D. Consumers only

Answer: A



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20. Stratification is seen in

A. Tundra

B. Temperate forest

C. Tropical forest

D. Desert

Answer: C



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21. The most stable ecosystem is

A. Forest

B. Mountain

C. Desert

D. Ocean

Answer: D



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22. Match the columns I and II and choose the correct combination from the options given.

Column I	Column II
a. Desert	1. Terrestrial ecosystem
b. River	2. Aquatic ecosystem
c. Pond	3. Man-made ecosystem
d. Lake	
e. Crop field	

A. a-1,b-2,c-2,d-2,e-3

B. a-1,b-2,c-2,d-1,e-3

C. a-2,b-1,c-1,d-3,e-1

D. a-1,b-2,c-2,d-3,e-3

Answer: A



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23. The two components of an ecosystem are

A. Plants and animals

B. Productivity and decomposition

C. Energy flow and mineral cycling

D. Biotic and abiotic

Answer: D



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24. An ecosystem contains

A. Producer

B. Consumers

C. Decomposers

D. All of the above

Answer: D



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25. A biotic community along with its interacting physical environment comprises

A. Phytosociology

B. Phytogeography

C. Ecosystem

D. Ecology

Answer: C



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26. Which of the following forest plants controls the light conditions at the ground ?

A. Lianas and climbers

B. Shrubs

C. Tall trees

D. Herbs

Answer: C



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Section A Topicwise Questions Topic 2 Productivity

1. The basic requirement for any ecosystem to function and sustain is

A. Photosynthesis

B. Decomposition

C. A constant input of solar energy

D. Unidirectional flow of energy in food chain

Answer: C



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2. Primary production is defined as the amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis . It is expressed in term of

(a) Weight (g^{-2}) (b) Weight ($g^{-2}yr^{-1}$)

(c) Energy ($kcal\ m^{-2}$) d. Energy ($kcal\ m^{-2}yr^{-1}$)

A. a and b

B. c and d

C. a and c

D. b and d

Answer: C



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3. Primary productivity of plants in an ecosystem depends on

A. A variety of environmental factors and availability of nutrients

B. The plant species inhabiting a particular area

C. Photosynthesis capacity of plants

D. All of the above

Answer: D





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4. The annual net primary productivity of land is about

A. 170 billion tons

B. 70 billion tons

C. 55 billion tons

D. 115 billion tons

Answer: D



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5. Which of the following statements about productivity is true ?

A. Primary productivity of all ecosystems is constant

B. Annual net primary productivity of the whole of the biosphere is 170 billion tons (dry weight) of organic matter.

C. Gross primary productivity is the amount of biomass available for consumption to

carnivores

D. Primary productivity depends upon the animal species inhabiting a particular area.

Answer: B



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6. Which of the following ecosystems is most productive in term of net primary productivity ?

A. Deserts

B. Tropical rain forest

C. Oceans

D. Estuaries

Answer: D



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7. Which ecosystem has the highest gross primary productivity ?

A. Rain forests

B. Coral reefs

C. Mangroves

D. Grasslands

Answer: B



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8. The driving force for an ecosystem is

A. Biomass

B. Producers

C. Carbohydrates in producers

D. Solar energy

Answer: D



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9. Ultimate source of energy for living biengs is

A. Carbohydrates

B. Fats

C. Sunlight

D. ATP

Answer: C



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10. Source of energy in ecosystem is

A. Sun

B. Sugar produced in photosynthesis

C. Green plants

D. ATP

Answer: A



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11. A detrivore is an

A. Animals feeding on plant matter

B. Animals feeding on decaying organic matter

C. Animals feeding on an animals

D. Animal feeding on another animal

Answer: B



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12. Ecosystems having the highest primary productivity in

A. Pond

B. Oceans

C. Desert

D. Forest

Answer: D



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13. Energy and nutrients enter a community through

A. Producers

B. Primary consumers

C. Decomposers

D. Sunlight

Answer: A



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14. Highest annual net primary productivity is of

- A. Tropical deciduous forest
- B. Temperate evergreen forest
- C. Terperate deciduous forest
- D. Tropical rain forest

Answer: D



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15. Which is correct about GPP and NPP in ecosystem ?

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

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

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

D. $NPP = DPP + \text{Animal respiration}$

Answer: A



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16. Biomass available for consumers and rate of formation of

A. Gross primary productivity and net primary productivity

B. Net primary productivity and secondary productivity

C. Gross primary productivity and secondary productivity

D. Net primary productivity and secondary productivity

Answer: D



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Section A Topicwise Questions Topic 3
Decomposition

1. The breakdown of complex organic matter into inorganic substances like carbon dioxide , water and nutrients is called

A. Fragmentation

B. Catabolism

C. Metabolism

D. Decomposition

Answer: D



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2. Which is the raw material for decomposition ?

A. Carbon dioxide and water

B. Any inorganic compound

C. Detritus

D. Both A and B

Answer: C



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3. Which of the following is included in detritus ?

A. Dead plant remains such as leaves , bark and flower

B. Dead remains of animals

C. Fecal matter of animals

D. All of the above

Answer: D



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4. Which of the following is an enzymatic process ?

A. Fragmentation

B. Leaching

C. Catabolism

D. All of the above

Answer: C



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5. Water-soluble inorganic nutrients go down into soil horizon and get precipitated as unavailable salts by the process of

A. Fragmentation

B. Leaching

C. Catabolism

D. All of the above

Answer: B



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6. Bacterial and fungul enzymes degrades detritus into simpler inorganic substances. This process is called

A. Fragmentation

B. Leaching

C. Catabolism

D. All of the above

Answer: C



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7. The rate of decomposition is controlled by

A. Chemical composition of detritus

B. Climatic factors

C. Microbes

D. Both A and B

Answer: D



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8. The most important climatic factors that regulate decomposition are

A. Temperature

B. Soil moisture

C. Carbon dioxide

D. Both A and B

Answer: D



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9. Temperature and soil moisture regulate decomposition through their effects on the

A. Chemical composition of detritus

B. Activity of soil microbes

C. Carbon dioxide content of detritus

D. Both A and B

Answer: B



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10. Read the following statements and find out incorrect statements(s)

A. In a particular climatic condition, decomposition rate is slower if detritus is rich nitrogen and water soluble compounds like sugars.

B. Rate of decomposition is quicker if detritus is rich in lignin and chitin.

C. Warm and moist environment inhibit decomposition .

D. All of the above

Answer: D



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11. Decomposition rate is slow if detritus is rich
in

A. Nitrogen

B. Humus

C. Sugars

D. Lignin and Chitin

Answer: D



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12. Breakdown of detritus into smaller particles by earthworm is a process called

- A. Humification
- B. Fragmentation
- C. Mineralisation

D. Catabolism

Answer: B



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13. Humus is

- A. Completely decomposed organic matter
- B. Partially decomposed organic matter
- C. partially decomposed inorganic matter
- D. Completely decomposed inorganic matter

Answer: B



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14. The process of mineralisation by micro-organisms 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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15. Among the following , where do you think the process of decomposition would be the fastest ?

A. Tropical rain forest

B. Antarctic

C. Dry and region

D. Alpine region

Answer: A



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Section A Topicwise Questions Topic 4 Energy Flow

1. Sun is the only source of energy for all the ecosystems on Earth , except

A. Some shallow South American lakes

B. Rocky sea coast of Scotland

C. Deep sea hydro-thermal ecosystems

D. All of the above

Answer: C



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2. Of the incident solar radiation PAR is

A. $< 50\%$

B. $> 50\%$

C. $2 - 10\%$

D. $1 - 5\%$

Answer: A



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3. Which of the following organisms fix sun's radiant energy to make food from simple inorganic materials ?

(a) Plants

(b) Photosynthesis bacteria

(c) Chemosynthetic bacteria

A. a and b

B. b and c

C. a and c

D. a, b and c

Answer: A



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4. Ecosystems follows

- A. First law of thermodynamics
- B. Second Law of thermodynamics
- C. Both laws of thermodynamics
- D. None of the above

Answer: C



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5. The unidirectional flow of energy from sun to producers and then to consumers is keeping it with the

- A. First law of thermodynamics
- B. Second Law of thermodynamics
- C. Both laws of thermodynamics
- D. None of the above

Answer: A



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6. In a terrestrial ecosystem , major producers are

A. Herbaceous and woody plants

B. Phytoplankton

C. Algae

D. All of the above

Answer: A



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7. Primary producers in an aquatic ecosystem are

A. Phytoplankton

B. Algae

C. Higher plants

D. All of the above

Answer: D



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8. Detritus food chain begins with the

A. Dead organic matter

B. Detritus

C. Death of an organism

D. All of the above

Answer: D



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9. Primary producers or herbivores in aquatic ecosystem are

- A. Insects
- B. Birds and mammals
- C. Molluscs
- D. All of the above

Answer: C



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10. Some common herbivore in terrestrial ecosystem are

A. Insects

B. Birds

C. Mammals

D. All of the above

Answer: D



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11. Based on the source of their nutrition or food, organism occupy a specific place in the food chain that is known as their

- A. Standing crop
- B. standing state
- C. Trophic level
- D. Pyramid

Answer: C



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12. Match the columns I and II and choose the correct combination from the options given.

<i>Column I</i>	<i>Column II</i>	<i>Column III</i>
a. 1° Producer	1. T ₁	K. Grasshopper
b. 1° Consumer	2. T ₂	L. Wolf
c. 2° Consumer	3. T ₃	M. Man
d. 3° Consumer	4. T ₄	N. Phytoplankton

A. a-1-K,b-2-L,c-3-M,d-4-N

B. a-1-N,b-2-M,c-3-K,d-4-L

C. a-1-N,b-2-K,c-3-L,d-4-M

D. a-1-N,b-2-K,c-3-L,d-4-M

Answer: C





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13. Birds and fishes belong to tropic level

A. T_1

B. T_2

C. T_3

D. T_4

Answer: C



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14. Cow and zooplanktons lies at tropic level

A. T_1

B. T_2

C. T_3

D. T_4

Answer: B



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15. For their energy demands, organisms at each trophic level depend on those at the

- A. Lower trophic level
- B. Higher trophic level
- C. Any trophic level
- D. Sunlight

Answer: A



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16. The standing crop of any trophic level is measured as the

- A. Biomass (mass of living organisms)
- B. Number of a unit area
- C. Both A and B
- D. None of the above

Answer: C



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17. The biomass of a species is expressed in terms of

A. Fresh weight

B. Dry weight

C. Both A and B

D. None of the above

Answer: C



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18. Measurement of biomass is more accurate in terms of

A. Fresh weight

B. Dry weight

C. Both A and B

D. None of the above

Answer: B



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

A. Producers

B. Primary consumers

C. Secondary consumers

D. Decomposers

Answer: A



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20. The second trophic level in the lake is

- A. Zooplanktons
- B. Phytoplankton
- C. Benthos
- D. Fishes

Answer: A



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

A. 1 – 5 %

B. 2 – 10 %

C. 30 %

D. 50 %

Answer: A



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22. 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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23. If the carbon atom 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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24. What will happen to a well growing herbaceous plant in the forest if it is transplanted outside the forest in a plant ?

A. It will grow normally

B. it will grow well because it is planted in the same locality

C. It may not survive because of change in its micro climate

D. It grows very well because the plant gets more sunlight.

Answer: C



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25. Which of the following is not a producer ?

A. Spirogyra

B. Agaricus

C. Volvox

D. Nostoc

Answer: B



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26. 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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27. If all the plants are to die, all the animals will also die due to deficiency of

A. Food

B. Carbon dioxide

C. Oxygen

D. timber

Answer: A



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28. Food chain in which microorganisms breakdown the food formed by primary producers is

A. parasitic food chain

B. Detritus food chain

C. Grazing food chain

D. predator food chain

Answer: B



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29. Pick up the correct food chain:

A. Grass → Chameleon → Insect →

Bird

B. Grass → Fox → Rabbit → Bird

C. Phytoplakton → Zooplankton → Fish

D. Fallen leaves → Bacteria → Insect
larvae

Answer: C



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30. Flow of energy declines as it passes from
food chain explained by

A. First law of thermodynamics

B. Second Law of thermodynamics

C. Newton's second law

D. Newton's third law

Answer: B



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31. Carnivores represent

A. Primary consumers

B. Secondary and tertiary consumers

C. Secondary consumers

D. Reducers

Answer: B



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32. Which can be the trophic level of a loin in a forest ecosystem ?

A. T_3

B. T_2

C. T_4

D. T_1

Answer: C



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33. Food chain is

A. Number of human beings forming a chain
for food

B. Animals near a source of food

C. Transfer of food energy from producers
to consumers

D. None of the above

Answer: C



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34. In an ecosystem , tropic level of man is

A. Producer

B. Herbivore

C. Omnivore

D. Carnivore

Answer: C



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35. Frog feeding on herbivores insect is

A. Primary consumers

B. Secondary consumer

C. Tertiary consumer

D. Top carnivore

Answer: B



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36. Nepenthes belongs to the category of

A. Primary consumers

B. Producer

C. Secondary consumers

D. Both B and C

Answer: D



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37. Path of energy flow in an ecosystem is

A. Herbivores → Producers → Carnivores

→ Decomposers

B. Herbivores → Carnivores → Producers

→ Decomposers

C. Producers → Carnivores → Herbivores

→ Decomposers

D. Producers → Herbivores → Carnivores

→ Decomposers

Answer: D



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38. In a biotic community , primary consumers are

A. Carnivores

B. Omnivores

C. Herbivores

D. Detrivores

Answer: C



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39. Each successive tropic level has

A. Less total energy

B. More total energy

C. Increased total energy

D. Non-estimated energy contents

Answer: A



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40. In a food chain, the initial organisms are

A. Top consumers

B. Secondary consumer

C. primary consumers

D. Photosynthesisers

Answer: D



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41. Bacteria and fungi are

A. Scavengers

B. Primary consumers

C. Secondary consumers

D. Decomposers

Answer: D



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42. The trophic level of a herbivores animal is

A. First

B. Second

C. Third

D. Intermediate

Answer: B



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43. Ecosystem is

A. Always open

B. Always closed

C. Both open and closed depending upon
community

D. Both open and closed depending upon
biomass

Answer: A



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44. Sequence of species through which organic food passes in a community is called

A. Food chain

B. Ecosystem

C. Population

D. Ecological pyramid

Answer: A



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45. Phutoplanktons are

A. Heterotrophs

B. Saprotrophs

C. Autotrophs

D. All of the above

Answer: C



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Section A Topicwise Questions Topic 5 Ecological Pyramids

1. How many secondary consumers are supported in a grassland ecosystem based on production of nearly 6 million plants ?

A. 5842000

B. 7,08,000

C. 3,54,000

D. 3

Answer: C



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2. What will be dry weight (kgm^{-2}) of tertiary consumer in an ecosystem if the dry weight primary consumer is $37kgm^{-2}$

A. $21Kgm^{-2}$

B. $11Kgm^{-2}$

C. $4Kgm^{-2}$

D. $1.5Kgm^{-2}$

Answer: D



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3. The primary producers convert how many energy in the sunlight available to them into

NPP

A. 10 %

B. 42 %

C. 50 %

D. 1 %

Answer: D



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4. A plant receives 6^6 j of sunlight energy .The energy reached at the tertiary consumer will be

A. 1000 J

B. 100 J

C. 10 J

D. 1 J

Answer: C



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5. Which is not a limitation of the ecological pyramid ?

A. Pyramid does not take into account the same species belonging to two or more trophic levels.

B. Pyramid assumes a simple food chain , something that almost never exist in nature.

C. Pyramids accommodate a food web

D. Saprophytes are not given any place in ecological pyramids even though they play a vital role in the ecosystem.

Answer: C



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6. Read the following statements regarding ecological pyramids and choose the correct answer .

(a) Relationship between organisms at different tropic levels is expressed in terms of number , biomass and energy.

(b) Any calculations of energy content, biomass or number has to include one group of

organisms at that trophic level

(c) In most ecosystems, all the pyramids of numbers, biomass, and energy are upright.

(d) The pyramids of biomass in sea is generally inverted.

(e) Pyramid of energy is always upright and can never be inverted.

A. a, c and d are wrong

B. a is wrong

C. b and e are wrong

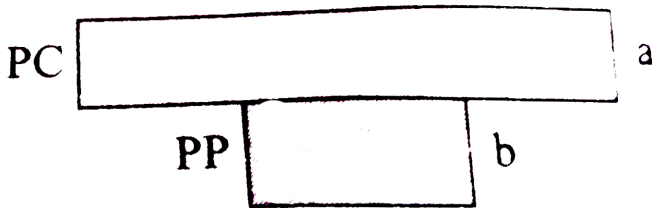
D. a and e are wrong

Answer: C



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7. Recognise the figure and find out the correct matching according to pyramids of biomass in an aquatic ecosystem .



A. a-11,b-4

B. $a-12, b-4$

C. $a-11, b-1.5$

D. $a-21, b-4$

Answer: D



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8. Identify the incorrect statement from the following .

A. Pyramid of energy is mostly upright but sometimes it may be inverted

B. Pyramid of number and biomass may be either upright or inverted

C. Pyramid of biomass in sea is generally inverted as biomass of fish far exceeds that of phytoplankton,

D. Food chains are generally short with few trophic levels as only 10% of the energy is

transferred to higher trophic level from lower one.

Answer: A



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9. 10% law of energy transfer in food chain was given by:

A. Elton

B. Schimper

C. Haeckel

D. Lindeman

Answer: D



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10. In parasitic food chain, the pyramid of numbers is

A. Upright

B. Inverted

C. Linear

D. Both A and B

Answer: B



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11. The pyramid of biomass in sea is generally

A. Upright

B. Slanting

C. Horizontal

D. Inverted

Answer: D



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12. Pyramid of number is

A. Always upright

B. Always inverted

C. Either upright or inverted

D. Neither upright nor inverted

Answer: C



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13. 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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14. Pyramid of numbers deals with number of

- A. Species in an area
- B. Individuals in a community
- C. Individuals in a trophic level
- D. Subspecies in a community

Answer: C



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Section A Topicwise Questions Topic 6 Ecological Succession Succession Of Plants

1. The entire sequence of communities that successively change in a given area are called

- A. Seral stages
- B. Pioneer community
- C. Climax community
- D. Sere (s)

Answer: D



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2. During succession , in the successive seral stages , there is a/an

A. Change in the diversity of species of organisms

B. Increase in the number of species and organisms

C. Increase in the total biomass

D. All of the above

Answer: D



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3. The present day communities in the world have come to be because of

A. Evolution

B. Succession

C. Variation

D. Mutation

Answer: B



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4. Succession is the characteristic of

A. Ecosystem

B. Community

C. Population

D. Organism

Answer: B



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5. Succession is a process that starts where

A. Living organisms are present there

B. No living organism are there

C. Soil is already present

D. All of the above

Answer: B



[Watch Video Solution](#)

6. Succession starts in an area that somehow lost all the living organisms that existed there is called

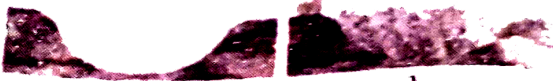
- A. primary succession
- B. Secondary secession
- C. Autogenic succession
- D. Natural succession

Answer: B

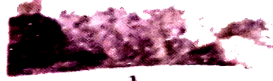


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**7. Identify the correct sequence of the stages in
1° hydrarch succession**



a



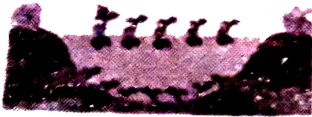
b



c



d



e



f



g

A. a,b,c,d,e,f,g

B. a,c,b,d,e,f,g

C. a,c,e,b,d,e,f

D. a,c,e,b,d,f,g

Answer: D



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8. Primary succession starts in an area where

A. No living organisms ever existed

B. All the living organisms that existed

there, lost to any reason

C. No living organisms are there

D. Both A and C

Answer: D



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9. Read the following statements and find out incorrect statements.

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

destroyed.

B. The establishment of a new biotic community generally slow in primary succession.

C. Before a biotic community of diverse organisms can become established, there must be soil.

D. Depending mostly on climate, soil formation takes natural processes several

hundred to several thousand years to produce fertile soil on bare rock.

Answer: A



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10. Match the columns I and II and choose the correct combination from the options given.

Column I

- a. **Bare rock**
- b. **Flooded land**
- c. **Newly cooled lava**
- d. **Abandoned farm land**
- e. **Newly created pond or reservoir**

Column II

- 1. **1° succession**
- 2. **2° succession**

A. a-1,b-2,c-1,d-2,e-1

B. a-2,b-1,c-2,d-1,e-2

C. a-1,b-2,c-2,d-1,e-2

D. a-1,b-1,c-1,d-2,e-1

Answer: A



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11. Description of ecological succession usually focuses on changes in

A. Animals

B. Decomposers

C. Vegetation

D. All of the above

Answer: C



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12. Based on the nature of habitat , succession
is of

- A. Two types -primary and secondary succession
- B. Two type-hydrarch and xerarch succession
- C. Two types-terrestrial and aquatic succession
- D. Three-type- 1^0 , 2^0 and 3^0 succession

Answer: B



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13. Succession takes place in water on very wet areas is called

- A. Hydrarch succession
- B. Xerarch succession
- C. tetarch succession
- D. All of the above

Answer: A



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14. In secondary succession the species that invade depend on the

A. Condition of the soil and environment

B. Availability of water

C. The presence of seeds or other propagules

D. All of the above

Answer: D



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15. Identify the correct sequence of the stages

in 1° hydrarch succession

(a) Reed-swamp stage

(b) submerged plant stage

(c) Scrub stage

(d) Forest

(e) Marsh- meadow stage

(f) Phytoplankton

(g) Submerged free floating plant stage

A. a,b,c,d,e,f,g

B. f,b,e,g,a,c,d

C. f,g,b,a,c,e,d

D. f,b,g,a,e,c,d

Answer: D



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16. Organisms need a constant supply of nutrients for

A. Growth

B. Reproduction

C. Regulation of various body functions

D. All of the above

Answer: D



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17. During the process of ecological succession the changes that takes 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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18. Identify the correct sequence of the stages in xerarch succession .

(a) Lichen

(b) Bigger plants

(c) Forest

(d) Bryophytes

A. a,b,c,d

B. b,a,d,c

C. a,d,b,c

D. a,b,d,c

Answer: C



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19. Climax community is in a stage of

- A. Non-equilibrium
- B. Equilibrium
- C. Disorder
- D. Constant change

Answer: B



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20. Nature of climax community depends upon

A. Water

B. Temperature

C. Soil fertility

D. Climate

Answer: D



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**Section A Topicwise Questions Topic 7 Nutrient
Cycling And Ecosystem Services Carbon Cycle And
P**

1. The amount of nutrients , such as carbon , nitrogen , phosphorus , calcium , etc . Present in the soil at any given time I reffered to as

A. Standing state

B. Standing crop

C. Biogeochemical cycling

D. Trophic level

Answer: A



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2. The movement of nutrient elements through the various components of an ecosystem is called

- A. Nutrient cycling
- B. Biogeological cycling
- C. Biogeochemical cycling
- D. Both A and C

Answer: D



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3. Environmental factors which regulate the rate of release of nutrients into the atmosphere are

a. pH b. Soil

c. Moisture d. Temperature

A. a, b and c

B. b, c and d

C. a, b and d

D. a, b, c and d

Answer: D



4. Read the following statements and find out the incorrect statement.

(A) Carbon constitutes 49 per cent of dry weight of organisms and is next to water.

(B) Of the total quantity of global carbon, 71 per cent carbon is found dissolved in ocean.

(C) Atmosphere contains about ten per cent of total global carbon .

(D) The oceanic reservoir regulates the amount of carbon dioxide in the atmosphere.

A. Carbon constitutes 49 per cent of dry weight of organism and is next of water.

B. Of the total quantity of global carbon , 71 per cent carbon is found dissolved in ocean.

C. Atmosphere contains about ten per cent of total global carbon

D. The oceanic reservoir regulates the amount of carbon dioxide in the atmosphere

Answer: C



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5. Carbon cycle occurs through

(a) Atmosphere (B) Ocean

(c) Living organisms (d) Dead organisms

A. a and b

B. a, b and c

C. a, b and d

D. a, b ,c and d

Answer: D



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6. How much amount of carbon is fixed in the biosphere annually ?

A. 4×10^{12} tons

B. 4×10^{12} tons

C. 4×10^{13} kg

D. 4×10^{12} kg

Answer: C



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7. A considerable amount of carbon returns to the atmosphere as CO_2 through respiratory activities of the

A. producers

B. Consumers

C. Both A and B

D. None of the above

Answer: C



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8. Fill in the blanks.

1. ...a... also represent a reservoir of carbon.

2....b... also contribute substantially to CO_2 pool by their processing of waste materials and

dead organic matter of land or oceans. Itbgt 3.

Some amount of the fixed carbon is lost to ...c... and removed from circulation.

A. a-Decomposers, b-fossil fuel,c-sediment

B. a-fossil fuel, b-decomposers, c-sediment

C. a-sediment, b-fossil fuel, c-decomposers

D. a-fossil fuel, b-sediment, c-decomposers

Answer: B



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9. Which of the following significantly increased the rate of release of carbon dioxide into the atmosphere ?

(a) Rapid deforestation

(b) Massive burning of fossil fuel for energy and transport

(c) Burning of wood

(d) Forest fire

(e) Combustion of organic matter

(f) Volcanic activity

A. b,c,d,e and f

B. a,b,c,d,e and f

C. a,b,c and d

D. a,c,d,e and f

Answer: B



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10. Many animals need large quantities of phosphorus to make

A. Bones

B. Teeth

C. Shells

D. All of the above

Answer: D



Watch Video Solution

11. Phosphorus present in the rocks in form of

- A. Phosphene
- B. Phosgene
- C. Pyrophosphates
- D. Phosphates

Answer: D



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12. Phosphorus is the major constituents of

- (a) Biological membrane
- (b) Nucleic acid
- (c) Cellular energy transfer system
- (d) proteins

A. a,b and c

B. b,c and d

C. a,b, and d

D. a,b,c and d

Answer: A



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13. Herbivores and other animals obtain P from

A. Soil

B. Rock

C. Plants

D. All of the above

Answer: C



[Watch Video Solution](#)

14. The products of ecosystem processes are named as

- A. Ecosystem product
- B. Ecosystem services
- C. Ecosystem goods
- D. All of the above

Answer: B



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15. A healthy forest ecosystem

- (a) Purify air and water
- (b) Mitigate droughts and floods
- (c) Cycle fertile soils
- (d) Generate fertile soils
- (e) Provide wildlife habitat
- (f) Maintain biodiversity
- (g) Pollinate crops
- (h) Provide storage site for carbon
- (i) Provide aesthetic , cultural and spiritual values

A. b,d,e,f,h and i

B. a,b,c,f,g and i

C. a,b,c,d,e,f, and g

D. a,b,c,d,e,f,g,h and i

Answer: D



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16. The cost of ecosystem services is nearly

A. US \$ 33 billion

B. US \$ 18 billion

C. US \$ 33 trillion

D. US \$ 18 trillion

Answer: C



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17. The total cost of the ecosystem services is nearly

A. Twice the value of the global gross national product (GNP)

B. Half the value of the global GNP

C. Twice the value of GPP

D. Twice the value of NPP

Answer: A



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18. The value of the global gross national product GNP is

A. US \$ 33 billion

B. US \$ 18 billion

C. US \$ 33 trillion

D. US \$ 18 trillion

Answer: D



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19. Match the columns I and II and choose the correct combination from the options given.

Column I (Ecosystem Service)	Column II (Cost)
a. Climate regulation	1. 50%
b. Nutrient cycling	2. < 10%
c. Soil formation	3. ~ 6%
d. Recreation	4. >10%
e. <i>Habitat for wildlife</i>	

A. a-2,b-3,c-1,d-3,e-2

B. a-3,b-2,c-4,d-2,e-3

C. a-3,b-2,c-1,d-2,e-3

D. a-4,b-2,c-3,d-3,e-2

Answer: C



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20. Fill in the blanks

(a) Plants are called as J_____ because they fix carbon dioxide.

(b) in an ecosystem dominated by trees, the pyramid (of numbers) is _____type.

(c) In aquatic ecosystem, the limiting factor for the productivity is _____

(d) Common detritivores in our ecosystem are _____

(e) The major reservoir of carbon on earth is _____

A. a-consumers, b-upright,c-temperature,d-
earthworm,e-atmosphere

B. a-produce, b-spindle, c-light, d-
earthworm,e-atmosphere

C. a-producer, b-inverted, c-carbon dioxide ,
d-mites, e-ocean

D. a-produce , b-spindle ,c-light,d-earthworm,
e-ocean

Answer: D



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21. Identify the incorrect statement from the following .

A. Reservoir pool for phosphorus cycle is earth's crust whereas atmosphere is the reservoir pool for carbon cycle.

B. During carbon cycle and phosphorus cycle, there is very little respiratory released of carbon and phosphorus.

C. Atmosphere inputs of phosphorus through rainfall are much smaller than carbon inputs.

D. Gaseous exchanges of phosphorus between organism and environment are negligible.

Answer: B



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1. Assertion: The annual net primary productivity of the whole biosphere is approximately 170 million tons (dry weight) of organic matter.

Reason: Of this, despite occupying about 70 percent of the surface, the productivity of oceans are only 55 million tons.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the 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 earthworms are referred to as the farmer's friend.

Reason : Earthworm help in the breakdown of complex organic matter as well as in loosening of the soil.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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3. Assertion: The three steps in the decomposition (fragmentation , leaching and catabolism) operate on the detritus simultaneously

Reason: Humification and mineralisation occurs during decomposition in the soil.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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4. Assertion : Humus serves as a reservoir of nutrients .

Reason: Humus is colloidal in nature.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the 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: Low temperature and anaerobiosis inhibit decomposition resulting in build up of organic materials

Reason: Decomposition is largely an oxygen requiring process.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the 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: All organisms are dependent for their food on producer either directly or indirectly

Reason: All animals are called consumers or heterotrophs.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the

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: Ecosystems are exempt from the Second Law of thermodynamics.

Reason: Ecosystems need a constant supply of energy to synthesise the molecules they

require, to counteract the universal tendency towards decreasing disorderliness.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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8. Assertion: No energy that is trapped into an organism remains in it for ever.

Reason: The energy trapped by the producer is either passed on to a consumer or the organism dies.

A. If both assertion and reason are true and the reason is a correct explanation of the

assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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9. Assertion: Cockroaches and crows are omnivores.

Reason: The natural interconnections of food chains make it a food web.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the 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: The base of each pyramid represents the top level consumer.

Reason: The apex of pyramid represents the producer.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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11. Assertion: The trophic level represents a functional level, not a species as such.

Reason: A given species may occupy more than one trophic level in the same ecosystem at the same time.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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12. Assertion: A sparrow is a primary producer when it eats seeds, fruits and peas.

Reason: Sparrow belongs to primary consumer when it eats insects and worms

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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13. Assertion: In most ecosystem , all the pyramids, of number, energy and biomass are upright.

Reason: In a food chain producers are more in number and biomass than the herbivores, and herbivores are more in number and biomass and carnivores.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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14. Assertion: The pyramid of biomass in sea is generally inverted.

Reason: The biomass of fishes far exceeds that of phytoplankton.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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15. Assertion: Pyramid of energy can never be inverted.

Reason: When energy flows from one trophic level to the next trophic level, some energy is always lost as heat at each step.

A. If both assertion and reason are true and the reason is a correct explanation of the

assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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16. Assertion: As succession proceeds the number and types of animals and decomposers change.

Reason: At any time during primary or secondary succession, natural or human induced disturbances (fire/deforestation) can convert a particular seral stage of succession to an earlier stage.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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17. Assertion: Succession takes place on very dry areas is called xerarch succession.

Reason: Both hydrarch and xerarch successions lead to medium water conditions (mesic)- neither too dry (xeric) nor too wet (hydric).

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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18. Assertion: The rate of succession is much faster in 2^0 succession and hence climax is reach more quickly.

Reason: In 2^0 succession soil is already there.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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19. Assertion: Standing state varies in different kinds of ecosystems.

Reason: Standing state also varies on a seasonal basis.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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20. (A) : Nutrients are never lost from the ecosystems

(R) : They are recycled time and again indefinitely.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: A



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21. Assertion: The function of the reservoir is to meet with the deficit occurs due to imbalance

in the rate of influx and efflux.

Reason: Human activities have significantly influenced the carbon cycle.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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22. Assertion: Healthy ecosystems are the base for a wide range of economic, environmental and aesthetic goods and services.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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23. Assertion: Atmosphere or hydrosphere is the reservoir for the carbon cycle.

Reason: Purification of air and water by forests in an ecosystem service.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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Section D Chapter End Test

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

- A. Producers and primary consumers
- B. Producers and primary carnivores
- C. producers and decomposers

D. Produces, consumers and decomposers

Answer: C



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2. The term "ecosystem development" to ecological succession was given by

A. Odum

B. Clements

C. Mishra

D. Blackman

Answer: A



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

A. Low stability and high resilience

B. High stability and high resilience

C. Low stability and low resilience

D. High stability and low resilience

Answer: A



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4. The term biocoenosis was given by

A. Haeckel

B. Carl Mobius

C. Tansley

D. Odum

Answer: B



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5. Concept of life forms was given by

A. Tansley

B. Clements

C. Raunkier

D. Odum

Answer: C



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6. Ecosystem of pond is

A. Lotic

B. Lentic

C. Benthic

D. Xeric

Answer: B



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7. Bulk CO_2 fixation occurs in

A. Crop plants

B. Oceans

C. Tropical rain forests

D. Temperate forests

Answer: B



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8. Pome is a false fruit as

A. Endocarp is cartilagenous

B. Pericarp is inconspicuous

C. Fruit is surrounded by fleshy thalamus

D. All of the above

Answer: C



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9. Humus is formed in

A. O-horizon

B. A-horizon

C. B-horizon

D. C-horizon

Answer: A



Watch Video Solution

10. Undecomposed organic matter is called

A. Humus

B. Litter

C. Duff

D. Colloid

Answer: B



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11. Maximum quantity of humus occurs in

A. Lowermost layer of soil

B. Upper layer of soil

C. Middle layer of soil

D. Same everywhere

Answer: B



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12. Last stable community in succession which depends on climate is:

A. Seral community

B. Pioneer community

C. Ecosere

D. Climax community

Answer: D



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13. 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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14. 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 one

D. Littoral zone

Answer: D



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

A. Grassland Tree ecosystem

B. Sea and Tree ecosystem

C. Tree and Sea ecosystem

D. Sea and Grassland ecosystem

Answer: C



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16. Which receives the maximum energy ?

A. Producers

B. Decomposers

C. primary consumers

D. Secondary consumers

Answer: A



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17. Which one is detritus food chain ?

A. Grass → Insects → Snake

B. Plankton → Small fish → Large fish

C. Organic matter → bacteria →

Molluscs

D. All of the above

Answer: C



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18. Decomposers are

A. Autotrophs

B. Heterotrophes/Organotrophs

C. Autoheterotrophs

D. Chemoautotrophs

Answer: B



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19. Identify the correct type of food chain.

Dead animal → Blowfly maggots →

Common frog → Snake:

A. Grazing food chain

B. Predator food chain

C. Decomposer food chain

D. Detrius food chain

Answer: D



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20. Trophic levels are formed by

A. Only bacteria

B. Only herbivores

C. organisms linked in food chain

D. Only plants

Answer: C



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21. If CO_2 is removed totally from the biosphere, which organism will be affected first ?

A. Consumers

B. Secondary consumer

C. Producers

D. Primary producers

Answer: C



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22. Green plants constitute

A. First trophic level

B. second trophic level

C. third trophic level

D. fourth trophic level

Answer: A



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

A. Nekton

B. Phytoplankton

C. benthos

D. Zooplankton

Answer: D



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24. Second most important trophic level in a lakes is

A. Zooplanktons

B. Phytoplankton

C. Benthos

D. Neuston

Answer: A



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25. Standing drop is

A. All photosynthetic living forms of an area

B. Amount of living matter in a component
of population at any time

C. All living forms

D. All crop plants in an area

Answer: B



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

A. Primary producers

B. Decomposers

C. primary consumers

D. Secondary consumers

Answer: D



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27. Which is false about chain ?

A. Grazing food chain is major conduit of energy for aquatic ecosystem

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

C. Primary consumers belong to first trophic level

D. Detritus food chain begins with dead organic matter

Answer: C



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28. In a food chain, the largest population is that of

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

Answer: A



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29. Ecosystem contains

- A. Food web
- B. Food chain
- C. Both A and B
- D. None of the above

Answer: C



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30. 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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31. Which of the following cannot be recycled in an ecosystem?

A. Nitrogen

B. Water

C. Energy

D. oxygen

Answer: C



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32. Flow of energy in an ecosystem is always

A. Unidirectional

B. Bidirectional

C. Multidirectional

D. None of the above

Answer: A



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33. Primary succession is development of communities in

A. Newly exposed unoccupied habitat

B. Cleared forest area

C. Freshly harvested crop field

D. Pond filled after a dry season

Answer: A



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34. Lichen is pioneer in succession

A. Hydrosphere

B. Lithosphere

C. Psammosere

D. Xerosere

Answer: B



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35. A community, which starts succession in habitat is

A. Pioneer community

B. Seral communities

C. Biotic community

D. Ecosere

Answer: A



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36. In ecological succession from pioneer to climax community, the biomass shall

A. Decrease

B. Increase and then decrease

C. No relation

D. Increase continuously

Answer: D



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37. In plant succession, the net productivity of climax community

A. Continues to increase

B. Becomes stable

C. Becomes halved

D. Reduced to 10%

Answer: B



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38. In succession , the structural complexity

A. Drastically increases

B. Remain constant

C. Slowly increases

D. Does not increases

Answer: C



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39. Stages of hydrarch succession are

- (a) Marsh meadow stage
- (b) Reed swamp stage
- (c) Submerged plant stage
- (d) Phytoplanktons stage
- (e) Submerged free floating plant stage

Identify the correct sequence.

A. d,c,e,b,a

B. c,e,a,b,d

C. b,d,c,a,e

D. d,e,c,b,a

Answer: A



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40. Different communities appearing and replacing one another are called

A. Climax communities

B. Seral communities

C. Serial communities

D. Successive communities

Answer: B



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41. First community established in an area is

A. Transitional community

B. Pioneer community

C. Climax community

D. Seral community

Answer: B



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

A. Phosphorus

B. Nitrogen

C. Sulphur

D. All of above

Answer: D



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43. 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 , and d only

B. b and c only

C. a and c only

D. b and d only

Answer: D



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44. Who have recently tried to put price tag on nature's life support services ?

A. Robert Constanza et al

B. Nile Perch et al

C. Herbet Boyer et al

D. Ramdeo Misra et al

Answer: B



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45. Which of the following are reservoirs for phosphorus and nitrogen cycle respectively?

A. Consumers

B. Atmosphere and bed rock

C. Atmosphere and producers

D. Bed rock and atmosphere

Answer: D



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46. Weathering of rocks makes phosphorus available to first

A. Producers

B. Decomposers

C. Consumers

D. None of the above

Answer: A



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47. Role of bacteria in carbon cycle is

A. Photosynthesis

B. Chemosynthesis

C. Break down of organic compounds

D. None of the above

Answer: C



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48. In the absence of decomposers , ecosystem functioning is adversely affected due to

A. Blocking of energy flow

B. Blocking of mineral cycling

C. Blocking of solar energy to herbivores

D. Rate of decomposition of other components will increase.

Answer: B



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49. The reservoir for the gaseous type of bio-geo chemical cycle exists in:

A. Stratosphere

B. Atmosphere

C. Ionosphere

D. Lithosphere

Answer: B



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50. 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 the threat of global warming

D. All of above

Answer: D



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1. Which two of the following statements about food chains are correct ?

(a) Removal of 80% tigers resulting in increased growth of vegetation.

(b) Removal of most carnivores resulted in increased population of deer.

(c) Length of food chain is limited to 3-4 trophic levels due to energy loss.

(d) Length of food chain may vary from 2-3 trophic levels.

A. a,d

B. a,b

C. b,c

D. c,d

Answer: C



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

A. Anaerobic environment around them

B. Low cellulose contents

C. Poor moisture content

D. Poor nitrogen content

Answer: C



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

A. 90 %

B. 10 %

C. 50 %

D. 1 %

Answer: B



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4. Which are ecologically similar ?

A. Monerans and fungi

B. Producers and consumers protists

C. Consumer protists and fungi

D. Monerans and producer protists

Answer: D



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5. Great Barrier Reef along east coast of Australia is a

A. Population

B. Community

C. Biome

D. Ecosystem

Answer: D



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6. A progressive series of changes in plant and animal life in an area from initial colonisation is called

A. Evolution

B. Succession

C. Selection

D. Specialisaton

Answer: B



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7. Correct sequence of plants in a hydrosere is

A. Pistia → Volvox → Scirpus →

Hydrilla → Oak → Lantana

B. Oak → Lantana → Volvox → Hydrilla

→ Pistia → Scirpus

C. Oak → Lantana → Scirpus → Pistia

→ Hydrilla → Volvox

D. Volvox → Hydrilla → Pistia →

Scirpus → Lanatana → Oak

Answer: D



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

A. Phytoplankton

B. Frog

C. Fish

D. Zooplankton

Answer: C



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9. In ecosystem , cycling of nutrients is called

- A. Geological cycle
- B. Biogeological cycling
- C. Geochemical cycle
- D. Chemical cycle

Answer: B



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10. Biomass available for consumption by herbivores and decomposers is called

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

Answer: D



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11. Loss of energy from one trophic level to next higher trophic level is

A. 10 %

B. 40 %

C. 60 %

D. 90 %

Answer: D



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12. In ecological succession, The climax is best recognised by the following stage

A. $P=R$

B. $P > R$

C. $P < R$

D. $P \neq R$

Answer: A



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

A. Natality

B. Mortality

C. Sex ratio

D. Stratification

Answer: D



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

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

Answer: B



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15. Which occupies more than one trophic level in the same ecosystem at the same time ?

A. Sparrow

B. Goat

C. Frog

D. Lion

Answer: A



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16. Which is correct for secondary succession ?

A. It follows primary succession.

B. It is similar but faster than primary succession

C. It begins on bare rock.

D. It occurs on deforested site.

Answer: D



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17. Both hydrarch and xerarch successions leads to

A. Medium water conditions

B. Excessive wet condition

C. Xeric condition

D. Highly dry conditions

Answer: A



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18. Which one is sedimentary cycle?

- A. Oxygen cycle
- B. Nitrogen cycle
- C. Hydrogen cycle
- D. Phosphorus cycle

Answer: D



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19. Phytoplankton are dominant in

A. Limnetic zone

B. Profundal zone

C. Littoral zone

D. Benthic zone

Answer: A



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20. Littoral zone is found along

A. High mountain

B. Sea

C. River

D. Desert

Answer: B



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21. The upright pyramid of number is absent in:

A. Lake

B. Forest

C. Grassland

D. Pond

Answer: B



Watch Video Solution

22. The second stage of hydrosere is occupied by plants like

A. Salix

B. Vallisneria

C. Azolla

D. Typha

Answer: B



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23. Pheretima and its close relatives obtain nourishment from

A. Decaying fallen leaves and soil organic matter

B. Soil insects

C. Sugarcane roots

D. Small pieces of fresh fallen leaves of

Maize and others

Answer: A



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24. Identify the possible link "A" in the following

food chain : Plant → insect → frog → "A"

→ eagle:

A. Rabbit

B. Parrot

C. Cobra

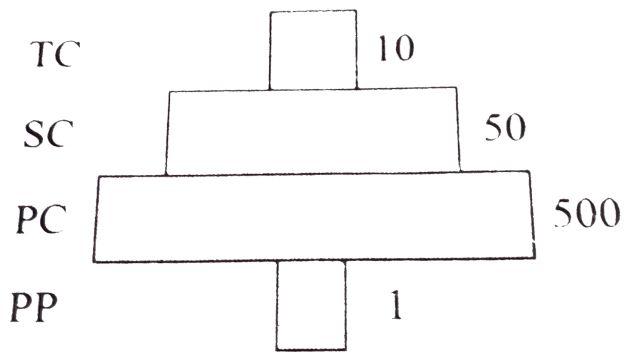
D. Wolf

Answer: C



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25. In the pyramid of numbers find out the correct possibilities



- A. Level PC is rats and level SC is cats
- B. Level PC is peepal tree and level SC is sheep
- C. Level PP is phytoplankton in sea and level TC is whale
- D. Level PC is insects and level SC is small insectivorous birds

Answer: D



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26. The rate of formation of new organic matter by rabbit in a grassland, is called.

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

Answer: D



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27. Important steps in decomposition are

- A. Fragmentation and mineralisation
- B. Leeching and catabolism
- C. Humification and mineralisation
- D. All of the above

Answer: D



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28. Standing crop refers to:

- A. Total living matter
- B. Total detritus
- C. Both detritus and living matter
- D. Total nutrients

Answer: A



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29. 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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30. Which is not a functional unit of an ecosystem ?

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

Answer: D



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31. Natural reservoir of phosphorus is:

A. Rock

B. Fossils

C. Sea water

D. Animals bones

Answer: A



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

A. Consumers

B. Decomposers

C. Producers → Carnivores → Herbivores
→ Decomposers

D. Parasites

Answer: A



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

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

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

C. Fragmentation -Carried out by organisms such as earthworm

D. Humification -leads to the accumulation of a dark coloured substance hums which undergoes microbial action at a very fast rate

Answer: C



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34. Which of the following is a primary consumer in maize field ecosystem ?

A. Grasshopper

B. Wolf

C. Phytoplankton

D. Lion

Answer: A



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35. When man eats fish, which feeds on zooplankton, which have eaten small plants, the producer in the chain is:

A. Small plants

B. Fish

C. Man

D. Zooplankton

Answer: A



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36. Biological equilibrium is an equilibrium among the:

A. Producers and light

B. Producers and consumers

C. producers and decomposers

D. Producers, consumers, and decomposers

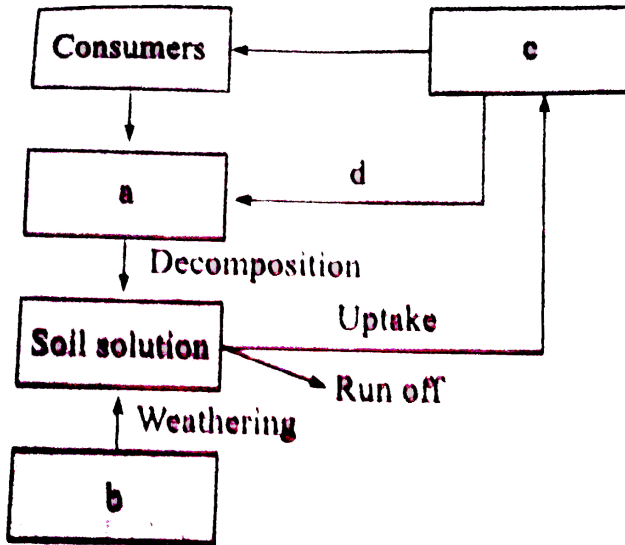
Answer: D



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37. Given below is a simplified model of phosphorus cycling in a terrestrial ecosystem

with four blanks (a-d) . Identify the blanks.



A. a-producers , b-litter fall, c-Rock minerals

,d-Detritus

B. a-Rock mineral, b-Detritus, c-Litter fall, d-

Producers

C. a-Litter fall, b-Producers, c-Rock minerals ,
d-Detritus

D. a-Detritus, b-Rock minerals, c-Producers, d-
Litter fall

Answer: D



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38. 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. 0.0002 J

B. 0.02 J

C. 0.02 J

D. 0.2 J

Answer: B



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39. 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. a-ii,b-I,c-iv,d-iii

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

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

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

Answer: A



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40. PAR stands for

- A. Photosynthetically Adaptable Radiation
- B. Photosynthetically Accessible Radiation
- C. Photosynthetic Activity Radiometry
- D. Photosynthetically Active Radiation

Answer: D



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41. Which of the following processes will be most adversely affected if microorganisms are removed from a forest ecosystem?

A. Solar energy fixation and nutrient cycling

B. Decomposition of organic matter and photosynthesis

C. Nitrogen fixation and decomposition of organic matter

D. Carbon assimilation and nitrogen fixation

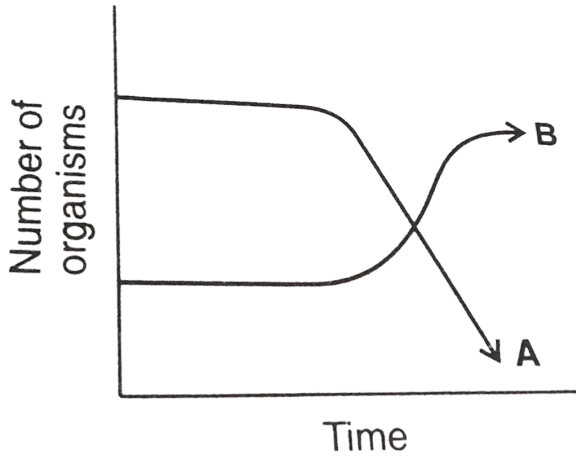
Answer: C



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42. The following graph depicts changes in two populations (A and B) of herbivores in a grassy field. A possible reason for these changes is

that :



A. Population A produced more offspring than population B

B. Population A consumed the members of population B

C. Both Plant populations in this habitat decreased

D. Population B completed more successfully for food than population A

Answer: D



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

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

Answer: D



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

A. Zonation

B. Pyramid

C. Divergence

D. Stratification

Answer: D



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45. Secondary/Succession takes place on/in :

A. Newly created pond

B. Newly cooled lava

C. bare rock

D. Degraded forest

Answer: D



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

A. Frog

B. Sparrow

C. Goat

D. Tiger

Answer: B



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47. Which of the following is a producer ?

A. Cuscuta

B. Mushroom

C. Phytoplankton

D. Mycoplasma

Answer: C



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48. Which of the following pairs of animals are correctly ranked in the ecosystem terminology ?

A. Rabbit and wall lizard-herbivores

B. Cow and honeybee -Producers

C. Frog and head louse-Carnivores

D. Cat and frog -Secondary consumers

Answer: D



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49. The mass of living material at a trophic level at a particular time is called:

A. Net Primary productivity

B. Standing crop

C. Gross primary productivity

D. Standing state

Answer: B



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50. During ecological succession:

A. The establishment of a new biotic community is very fast in its primary

phase

B. The numbers and types of animals remain constant

C. The changes lead to a community that is in near equilibrium with the environment and is called pioneer community

D. The gradual and predictable change in species composition occurs in a given area

Answer: D



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

- A. Secondary consumers
- B. tertiary consumers
- C. Detritivores
- D. Primary consumers

Answer: C



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

- | | | |
|-----|-----------------------------------|-------------------------|
| (A) | Gaseous nutrient cycle | Carbon and sulphur |
| | Sedimentary nutrient cycle | Nitrogen and Phosphorus |
| (B) | Gaseous nutrient cycle | Nitrogen and sulphur |
| | Sedimentary nutrient cycle | Carbon and Phosphorus |
| (C) | Gaseous nutrient cycle | Sulphur and Phosphorus |
| | Sedimentary nutrient cycle | Carbon and Nitrogen |
| (D) | Gaseous nutrient cycle | Carbon and Nitrogen |
| | Sedimentary nutrient cycle | Sulphur and Phosphorus |



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53. The last and stable community in an area is called

- A. Pioneer community
- B. Climax community
- C. Transitional community
- D. Seral community

Answer: B



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54. Pyramid of energy in a river ecosystem is:

- A. Always upright
- B. Always inverted
- C. Constant
- D. Declining

Answer: A



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55. Which one of the following is a characteristic feature of cropland ecosystem?

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

Answer: D



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56. The term ecosystem was coined by:

A. E.Haechel

B. E.Warming

C. EP. Odum

D. A.G. Transley

Answer: D



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

A. Tropical rain forest

B. Grassland

C. Temperate forest

D. Tropical Savannah

Answer: A



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

Secondary consumer : 60g

Primary consumer: 60g

Primary producer:10g

A. Inverted pyramid of biomass

B. Pyramid of energy

C. Upright pyramid of number

D. Upright pyramid of biomass

Answer: A



59. In a growing population of a country ,

A. pre-reproductive individuals are more than the reproductive individuals

B. reproductive individuals are less than the post-reproductive individuals

C. reproductive and pre-reproductive individuals are equal in number

D. pre-reproductive individuals are less than
the reproductive individuals

Answer: A



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60. Trophic levels are formed by

A. Plants

B. animals

C. organisms linked in food chain

D. carnivores

Answer: C



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61. Desert can be converted into green land by planting

A. oxylophytes

B. psammophytes

C. halophytes

D. trees

Answer: B



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62. Mr. X is eating curd/yoghurt. For this food intake in a food chain he should be considered as occupying:

A. first trophic level

B. second trophic level

C. third trophic level

D. fourth trophic level

Answer: C



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

A. population

B. Community

C. ecosystem

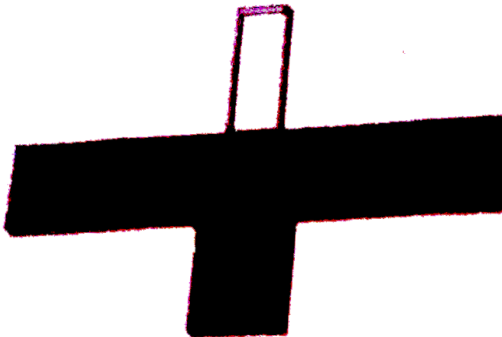
D. biome

Answer: C



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64. Given below is one of the types of ecological pyramids. This type represents



- A. pyramid of numbers in a grassland
- B. pyramid of biomass in a fallow land
- C. pyramid of biomass in a lake
- D. energy pyramid in a spring

Answer: C



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65. An ecosystem ,such as an aquarium is self-sustaining if it involves the interaction

between organisms , a flow of energy , and the presence of

- A. equal numbers of plants and animals
- B. more animals than plants
- C. materials cycles
- D. pioneer organisms

Answer: C



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66. A scorpion stalks, kills, and then eats a spider. Based on its behavior , which ecological terms describe the scorpion ?

A. producer, herbivore, decomposer

B. producer, carnivore, heterotroph

C. predator, carnivore, consumer

D. predator , autotroph, herbivore

Answer: C



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67. Whale is

- A. Primary producer
- B. Carnivorous, secondary consumer
- C. A decomposer
- D. Herbivorous

Answer: B



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68. Which one of the following is not a function of an ecosystem?

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

Answer: D



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69. The rate of formation of new organic matter by rabbit in a grassland, is called.

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

Answer: B



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70. Arrange the following ecosystems in increasing order of their mean NPP (tons/ha/year).

(A) Tropical deciduous forest

(B) Temperate coniferous forest

(C) Tropical rainforest

(D) Temperate deciduous forest

A. $b < a < d < c$

B. $d < b < a < c$

C. $a < c < d < b$

D. $b < d < a < c$

Answer: D



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71. 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 the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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72. 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 the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: C



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73. Assertion: Secondary succession taked place
i recently.

Reason : It is caused due to baing of an area.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: C



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74. Assertion: Pyramid of energy may be upright or inverted.

Reason : Only 20% of energy goes to next trophic level.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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75. Assertion: Net primary productivity is gross primary productivity minus respiration.

Reason :Secondary productivity is produced by hetrotrophs.

A. If both assertion and reason are true and the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B



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76. 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 the reason is a correct explanation of the assertion.

B. If both assertion and reason are true but reason is not a correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D



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