

CHAPTER 6

Ecosystem

Ecosystem-Structure And Function

- Which ecosystem has the maximum biomass? (2017-Delhi)
 - Forest ecosystem
 - Grassland ecosystem
 - Pond ecosystem
 - Lake ecosystem
- The term ecosystem was coined by: (2016 - I)
 - E.P. Odum
 - A.G. Tansley
 - E. Haeckel
 - E. Warming
- Which one of the following is a characteristic feature of cropland ecosystem? (2016 - I)
 - Absence of soil organisms
 - Least genetic diversity
 - Absence of weeds
 - Ecological succession
- Vertical distribution of different species occupying different levels in a biotic community is known as: (2015)
 - Zonation
 - Pyramid
 - Divergence
 - Stratification
- An association of individuals of different species living in the same habitual and having functional interactions is: (2015 Re)
 - Biotic community
 - Ecosystem
 - Population
 - Ecological niche

Productivity

- In the equation $GPP - R = NPP$. (2021)
R represents:
 - Retardation factor
 - Environment factor
 - Respiration losses
 - Radiant energy
- In relation to gross primary productivity and net primary productivity of an ecosystem, which one of the following statements is correct? (2020)
 - Gross primary productivity is always more than net primary productivity.
 - Gross primary productivity and net primary productivity are one and same.
 - There is no relationship between Gross primary productivity and net primary productivity
 - Gross primary productivity is always less than net primary productivity.

- In an ecosystem, the rate of production of organic matter during photosynthesis is termed as: (2015)
 - Secondary productivity
 - Net productivity
 - Net primary productivity
 - Gross primary productivity
- Secondary productivity is rate of formation of new organic matter by: (2013)
 - Decomposer
 - Producer
 - Parasite
 - Consumer

Decomposition

- Given below are two statements: (2022)
Statement I: Decomposition is a process in which the detritus is degraded into simpler substances by microbes.
Statement II: Decomposition is faster if the detritus is rich in lignin and chitin
In the light of the above statements, choose the correct answer from the options given below.
 - Statement I is incorrect but Statement II is correct
 - Both Statement I and Statement II are correct
 - Both statement I and statement II are incorrect
 - Statement I is correct but Statement II is incorrect
- Detritivores breakdown detritus into smaller particles. This process is called. (2022)
 - Decomposition
 - Catabolism
 - Fragmentation
 - Humification
- The rate of decomposition is faster in the ecosystem due to following factors EXCEPT: (2020-Covid)
 - Warm and moist environment
 - Presence of aerobic soil microbes
 - Detritus richer in lignin and chitin
 - Detritus rich in sugars
- Which one of the following processes during decomposition is correctly described? (2013)
 - Leaching: Water soluble inorganic nutrients rise to the top layers of soil
 - Fragmentation: Carried out by organisms such as earthworm
 - Humification: Leads to the accumulation of a dark colored substance humus which undergoes microbial action at a very fast rate
 - Catabolism: Last step in the decomposition under fully anaerobic condition

Energy Flow & Ecological Pyramids

14. Which of the following statements is not correct? (2021)
- Pyramid of biomass in sea is generally upright.
 - Pyramid of energy is always upright.
 - Pyramid of numbers in a grassland ecosystem is upright.
 - Pyramid of biomass in sea is generally inverted.
15. Match the trophic levels with their correct species examples in grassland ecosystem. (2020)

Column-I		Column-II	
1.	Fourth trophic level	(i)	Crow
2.	Second trophic level	(ii)	Vulture
3.	First trophic level	(iii)	Rabbit
4.	Third trophic level	(iv)	Grass

- | | | | | |
|----|-------|-------|-------|------|
| | (1) | (2) | (3) | (4) |
| a. | (iii) | (ii) | (i) | (iv) |
| b. | (iv) | (iii) | (ii) | (i) |
| c. | (i) | (ii) | (iii) | (iv) |
| d. | (ii) | (iii) | (iv) | (i) |

16. Which of the following statements is incorrect? (2020-Covid)
- Energy content gradually increases from first to fourth trophic level
 - Number of individuals decreases from first trophic level to fourth trophic level
 - Energy content gradually decreases from first to fourth trophic level
 - Biomass decreases from first to fourth trophic level
17. Which of the following ecological pyramids is generally inverted? (2019)
- Pyramid of numbers in grassland
 - Pyramid of energy
 - Pyramid of biomass in a forest
 - Pyramid of biomass in a sea
18. What type of ecological pyramid would obtained with the following data? (2018)
- Secondary consumer : 120 g
Primary consumer : 60 g
Primary producer : 10 g
- Inverted pyramid of biomass
 - Pyramid of energy
 - Upright pyramid of numbers
 - Upright pyramid of biomass

19. The primary producers of the deep-sea hydrothermal vent ecosystem are: (2016 - II)
- Blue-green algae
 - Coral reefs
 - Green algae
 - Chemosynthetic bacteria
20. The mass of living material at a trophic level at a particular time is called: (2015)
- Net primary productivity
 - Standing crop
 - Gross primary productivity
 - Standing state
21. Most animals that live in deep oceanic waters are: (2015)
- Secondary consumers
 - Tertiary consumers
 - Detritivores
 - Primary consumers
22. 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? (2014)
- Plant → Mice → Snake → Peacock
- 0.0002 J
 - 0.02 J
 - 0.002 J
 - 0.2 J

Ecological Succession

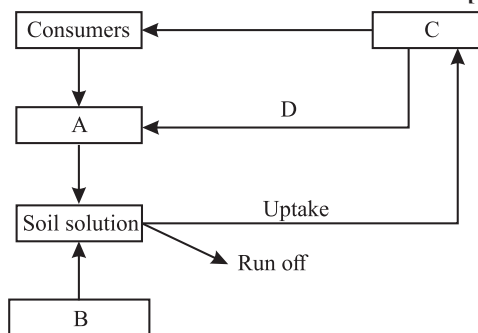
23. Presence of plants arranged into well defined vertical layers depending on their height can be seen best in: [RC] (2017-Delhi)
- Tropical Savannah
 - Tropical Rain Forest
 - Grassland
 - Temperate Forest
24. Which of the following would appear as the pioneer organisms on bare rocks? [RC] (2016 - I)
- Lichens
 - Liverworts
 - Mosses
 - Green algae
25. Secondary succession takes place on/in: [RC] (2015)
- Newly created pond
 - Newly cooled lava
 - Bare rock
 - Degraded forest
26. During ecological succession: [RC] (2015 Re)
- The establishment of a new biotic community is very fast in its primary phase.
 - The numbers and types of animals remain constant.
 - The changes lead to a community that is in near equilibrium with the environment and is called pioneer community
 - The gradual and predictable change in species composition occurs in a given area
27. The second stage of hydrosere is occupied by plants like: [RC] (2013)
- Azolla
 - Typha
 - Salix
 - Vallisneria

Nutrient Cycling

28. Which one of the following will accelerate phosphorus cycle?
[RC] (2022)
- Rain fall and storms
 - Burning of fossil fuels
 - Volcanic activity
 - Weathering of rocks
29. The amount of nutrients, such as carbon, nitrogen, phosphorus and calcium present in the soil at any given time is referred as:
[RC] (2021)
- Climax community
 - Standing state
 - Standing crop
 - Climax
30. Which of the following statements is incorrect regarding the phosphorus cycle?
[RC] (2020-Covid)
- Phosphorus solubilising bacteria facilitate the release of phosphorus from organic remains
 - There is appreciable respiratory release of phosphorus into atmosphere
 - It is sedimentary cycle
 - Phosphates are the major form of phosphorus reservoir
31. In which of the following both pairs have correct combination?
[RC] (2015 Re)

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

32. Given below is a simplified model of phosphorus cycling in a terrestrial ecosystem with four blanks (A-D). Identify the blanks.
[RC] (2014)



	A	B	C	D
a.	Producers	Litter fall	Rock minerals	Detritus
b.	Rock minerals	Detritus	Litter fall	Producers
c.	Litter fall	Producers	Rock minerals	Detritus
d.	Detritus	Rock minerals	Producer	Litter fall

33. Natural reservoir of phosphorus is:
[RC] (2013)
- Fossils
 - Sea water
 - Animal bones
 - Rock

Ecosystem Services

34. Match the following and select the correct option:
[RC] (2014)

A.	Earthworm	i.	Pioneer species	
B.	Succession	ii.	Detritivores	
C.	Ecosystem service	iii.	Natality	
D.	Population growth	iv.	Pollination	
	A	B	C	D
a.	ii	i	iv	iii
b.	i	ii	iii	iv
c.	iv	i	iii	ii
d.	iii	ii	iv	i

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
a	b	b	d	a	c	a	d	d	d	c	c	b	a	d	a	d
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
a	d	b	c	b	b	a	d	d	d	d	b	b	d	d	d	a