ECOSYSTEM

PYQ

AIPMT 2006

1. Which one of the following is *not* used for construction of ecological pyramids?
(1) Rate of energy flow
(2) Fresh weight
(3) Dry weight
(4) Number of individuals

AIPMT 2007

2. Which one of the following ecosystem types has the highest annual net primary productivity?
(1) Temperate deciduous forest
(2) Tropical rain forest
(3) Tropical deciduous forest
(4) Temperate evergreen forest

AIPMT 2008

3. Consider the following statements concerning food chains :-
(a) Removal of 80% tigers from an area resulted in greatly increased growth of vegetation
(b) Removal of most of the carnivores resulted in an increased population of deers
(c) The length of food chains is generally limited to 3-4 trophic levels due to energy loss.
(d) The length of food chains may very from 2 to 8 trophic levels.
Which two of the above statements are correct?
(1) a, d (2) a, b
(3) b, c (4) c, d

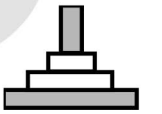
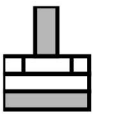
AIPMT 2009

4. Which one of the following types of organisms occupy more than one trophic level in a
pond ecosystem?
(1) Frog (2) Phytoplankton
(3) Fish (4) Zooplankton

AIPMT 2010

5. The biomass available for consumption by the herbivores and the decomposers is called :-
(1) Gross primary productivity
(2) Net primary productivity
(3) Secondary productivity
(4) Standing crop

6. Which of the following representations shows the pyramid of numbers in a forest ecosystem: -

(A) 
(B) 
(C) 
(D) 

(1) A (2) B (3) C (4) D

AIPMT 2011

7. Mass of living matter at a trophic level in an area at any time is called: -
(1) Standing crop (2) Detritus
(3) Humus (4) Standing state

8. Of the total incident solar radiation, the proportion of PAR is: -
(1) About 70% (2) About 60%
(3) Less than 50% (4) More than 80%

9. Which one of the following statements is correct for secondary succession?
(1) It begins on a bare rock
(2) It occurs on a deforested site
(3) It follows primary succession
(4) It is similar to primary succession expect that it has a relatively fast pace.

10. Which one of the following statements for pyramid of energy is incorrect, whereas the remaining three are correct?
(1) Its base is broad
(2) It shows energy content of different trophic level organisms
(3) It is inverted in shape
(4) It is upright in shape

11. Which one of the following animals may occupy more than one trophic level in the same ecosystem at the same time?
(1) Frog (2) Sparrow
(3) Lion (4) Goat

12. The breakdown of detritus into smaller particles by earthworm is a process called :-
(1) Catabolism (2) Humification
(3) Fragmentation (4) Mineralisation

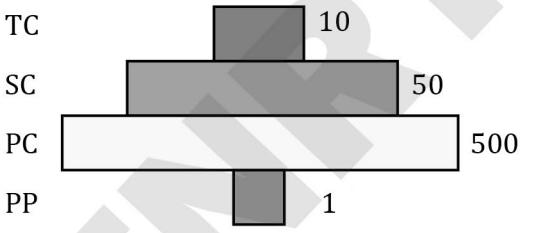
AIPMT 2012

13. Which one of the following is not a functional unit of an ecosystem :-
(1) Productivity (2) Stratification
(3) Energy flow (4) Decomposition

14. The upright pyramid of number is absent in
(1) Lake (2) Grassland
(3) Pond (4) Forest

15. Which one of the following is not a gaseous biogeochemical cycle in ecosystem?
(1) Nitrogen cycle (2) Carbon cycle
(3) Sulphur cycle (4) Phosphorus cycle

16. Given below is an imaginary pyramid of numbers. What could be one of the possibilities about certain organisms at some of the different levels?

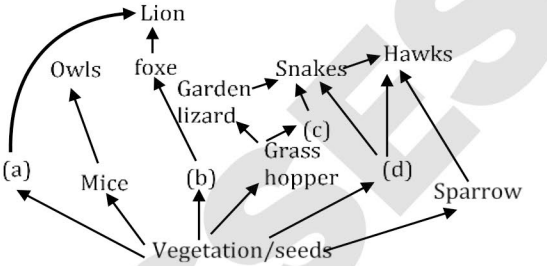


(1) Level one PP is "Pipal trees" and the level SC is "sheep"
(2) Level PC is "rats" and level SC is "cats"
(3) Level PC is "insects" and level SC is "small insectivorous birds
(4) Level PP is "Phytoplanktons" in sea and "Whale" on top level TC.

17. Identify the possible link "A" in the following food chain :-
Plant → Insect → Frog → "A" → Eagle
(1) Cobra (2) Parrot
(3) Rabbit (4) Wolf

18. The second stage of hydrosere is occupied by plants like :-
(1) *Salix* (2) *Vallisneria*
(3) *Azolla* (4) *Typha*

19. Identify the likely organisms (a), (b), (c) and (d) in the food web shown below :-



Options :

	(a)	(b)	(c)	(d)
(1)	*rat*	*dog*	*tortoise*	*crow*
(2)	*squirrel*	*cat*	*rat*	*pigeon*
(3)	*deer*	*rabbit*	*frog*	*rat*
(4)	*dog*	*squirrel*	*bat*	*deer*

20. The rate of formation of new organic matter by rabbit in a grassland, is called :-
(1) Net primary productivity
(2) Gross primary productivity
(3) Net productivity
(4) Secondary productivity

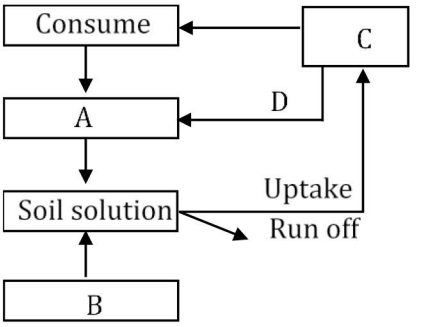
NEET-UG 2013

21. Secondary productivity is rate of formation of new organic matter by :-
(1) Decomposer (2) Producer
(3) Parasite (4) Consumer

22. Which one of the following processes during decomposition is correctly described?
(1) Leaching — Water soluble inorganic nutrients rise to the top layers of soil
(2) Fragmentation — Carried out by organisms such as earthworm
(3) Humification — Leads to the accumulation of a dark coloured substance humus which undergoes microbial action at a very fast rate
(4) Catabolism — Last step in the decomposition under fully anaerobic condition

AIPMT 2014

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



Options :

	A	B	C	D
(1)	Rock minerals	Detritus	Litter fall	Producers
(2)	Litter fall	Producers	Rock minerals	Detritus
(3)	Detritus	Rock minerals	Producer	Litter fall
(4)	Producers	Litter fall	Rock minerals	Detritus

24. 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

(1) 0.02 J (2) 0.002 J
(3) 0.2 J (4) 0.0002 J

AIPMT 2015

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

(1) Standing state
(2) Net primary productivity
(3) Standing crop
(4) Gross primary productivity

26. In an ecosystem the rate of production of organic matter during photosynthesis is termed as :-

(1) Gross primary productivity
(2) Secondary productivity
(3) Net productivity
(4) Net primary productivity

27. Secondary Succession takes place on/in :-

(1) Degraded forest
(2) Newly created pond
(3) Newly cooled lava
(4) Bare rock

28. In which of the following both pairs have corrected combination?

(1)	Gaseous nutrient cycle	Sulphur and Phosphorus
	Sedimentary nutrient cycle	Carbon and Nitrogen
(2)	Gaseous nutrient cycle	Carbon and Nitrogen
	Sedimentary nutrient cycle	Sulphur and Phosphorus
(3)	Gaseous nutrient cycle	Carbon and Sulphur
	Sedimentary nutrient cycle	Nitrogen and Phosphorus
(4)	Gaseous nutrient cycle	Nitrogen and Sulphur
	Sedimentary nutrient cycle	Carbon and Phosphorus

29. During ecological succession :-

(1) The changes lead to a community that is in near equilibrium with the environment and is called pioneer community
(2) The gradual and predictable change in species composition occurs in a given area
(3) The establishment of a new biotic community is very fast in its primary phase
(4) The numbers and types of animals remain constant

NEET-I 2016

30. The term ecosystem was coined by :-

(1) E. P. Odum (2) A. G. Tansley
(3) E. Haeckel (4) E. Warming

NEET-II 2016

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

(1) Blue-green algae (2) Coral reefs
(3) Green algae (4) Chemosynthetic bacteria

NEET-UG 2017

32. Which ecosystem has the maximum biomass?
(1) Grassland ecosystem
(2) Pond ecosystem
(3) Lake ecosystem
(4) Forest ecosystem

33. The sequential events from initial stage till climax stage in a succession are called :-
(1) Ecesis (2) Sere
(3) Nudation (4) Migration

NEET-UG 2019

34. Which of the following ecological pyramids is generally inverted?
(1) Pyramid of numbers in grassland
(2) Pyramid of energy
(3) Pyramid of biomass in a forest
(4) Pyramid of biomass in a sea

35. Which of the following statements is incorrect?
(1) Biomass decreases from first to fourth trophic level
(2) Energy content gradually increases from first to fourth trophic level
(3) Number of individuals decreases from first trophic level to fourth trophic level
(4) Energy content gradually decreases from first to fourth trophic level

36. The rate decomposition is faster in the ecosystem due to following factors EXCEPT
(1) Detritus rich in sugars
(2) Warm and moist environment
(3) Presence of aerobic soil microbes
(4) Detritus richer in lignin and chitin

NEET-UG 2020

37. In relation of Gross primary productivity and Net primary productivity of an ecosystem, which one of the following statements is correct?
(1) There is no relationship between Gross primary productivity and Net primary productivity.
(2) Gross primary productivity is always less than net primary productivity.
(3) Gross primary productivity is always more than net primary productivity.
(4) Gross primary productivity and Net primary productivity are one and same.

NEET-UG 2021

38. The amount of nutrients, such as carbon, nitrogen, phosphorus and calcium present in the soil at any given time, is referred as :-
(1) Climax
(2) Climax community
(3) Standing state
(4) Standing crop

39. Which of the following statements is not correct?
(1) Pyramid of biomass in sea is generally inverted.
(2) Pyramid of biomass in sea is generally upright.
(3) Pyramid of energy is always upright.
(4) Pyramid of numbers in a grassland ecosystem is upright.

40. In the equation GPP - R = NPP
R represents :-
(1) Radiant energy
(2) Retardation factor
(3) Environment factor
(4) Respiration losses

NEET-UG 2022

41. The amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis is called:
(1) Secondary production
(2) Primary production
(3) Gross primary production
(4) Net primary production

42. Which one of the following will accelerate phosphorus cycle?
(1) Volcanic activity
(2) Weathering of rocks
(3) Rain fall and storms
(4) Burning of fossil fuels

43. Match the List-I with List-II

List-I		List-II	
(a)	Carbon dissolved in oceans	(i)	55 billion tons
(b)	Annual fixation of carbon through photosynthesis	(ii)	71%
(c)	PAR captured by plants	(iii)	4×10^{13} kg
(d)	Productivity of oceans	(iv)	2 to 10%

Choose the correct answer from the options given below:

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

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	2	3	3	2	2	1	3	2	3	2	3	2	4	4
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	3	1	2	3	4	4	2	3	1	3	1	1	2	2	2
Question	31	32	33	34	35	36	37	38	39	40	41	42	43		
Answer	4	4	2	4	2	4	3	3	2	4	2	2	3		

EXERCISE-III (A) NCERT BASED QUESTIONS

1. Adaptation to low temperature and freezing in animals occurs due to the production of :-
(1) Antifreeze proteins
(2) Chaperonins
(3) Proline
(4) Analine

2. Which one of the following has the largest population in a food chain ?
(1) Producers
(2) Primary consumers
(3) Secondary consumers
(4) Decomposers

3. The second trophic level in a lake is :-
(1) Phytoplankons
(2) Zooplanktons
(3) Benthos
(4) Fishes

4. Secondary producers are :-
(1) Herbivores
(2) Producers
(3) Carnivores
(4) None of the above

5. What is the percentage of photosynthetically active radiation (PAR) in the incident solar radiations ?
(1) 100 % (2) 50 %
(3) 1–5 % (4) 2 – 10 %

6. Which of the following is an abiotic components of the ecosystem ?
(1) Bacteria (2) Humus
(3) Plants (4) Fungi

7. Which of the following processes helps in Nutrient conservation ?
(1) Mineralisation
(2) Immobilisation
(3) Leaching
(4) Nitrification

8. Which of the following represents the sedimentary type of nutrient cycle ?
(1) Sulphur (2) Phosphorus
(3) Nitrogen (4) Oxigen

9. Photosynthetically active radiation (PAR) represents the following range of wave length.
(1) 400 – 700 nm (2) 500 – 600 nm
(3) 450 – 950 nm (4) 340 – 450 nm

10. Soil erosion can be prevented by :-
(1) Overgrazing
(2) Removal of vegetation
(3) Afforestation
(4) Deforestation

11. Mild grazing in grassland by herbivores :-
(1) Retards growth of grasses
(2) Arrest growth of grasses
(3) Stimulatis growth of grasses
(4) Destroy Vegetation

12. Deforestation generally decreases :-
(1) Rain fall (2) Soil erosion
(3) Drought (4) Global warming

13. Forest area in india is about :-
(1) 9% of geographical area
(2) 19% of geographical area
(3) 29% of geographical area
(4) 37% of geographical area

EXERCISE-III (B) (ANALYTICAL QUESTIONS)

14. ***Acacia***, ***Prosopis*** and ***Caparis*** belongs to :-
(1) Deciduous forest
(2) Tropical forest
(3) Thorn forest
(4) Evergeen forest

15. Total amount of energy trapped by green plants in food is called :-
(1) Gross primary production
(2) Net primary production
(3) Standing crop
(4) Standing state

16. Bacteria are essential in carbon cycle as :-
(1) Decomposer (2) Synthesizer
(3) Consumer (4) Pri. Producer

17. In which biome a new plant may adapt soon:-
(1) Tropical rain forest
(2) Desert
(3) Mangrove
(4) Sea island

18. Concentration of DDT is highest in :-
(1) Primary consumer
(2) Producers
(3) Top consumer
(4) Decomposers

19. Percentage energy transferred to higher trophic level in food chain is :-
(1) 1% (2) 10%
(3) 90% (4) 100%

20. Biotic and abiotic components form :-
(1) Community (2) Ecosystem
(3) Population (4) Species

21. Species diversity is maximum in :-
(1) Tropical rain forest.
(2) Temperate forest.
(3) Deserts
(4) Hill slops

22. Insectivorous plants grow in the soil which is deficient in :-
(1) Mg (2) Ca
(3) P (4) N

23. Which one of the following is correct matching of a plant, its habit and the forest type where it normally occurs ?
(1) ***Prosopis***, tree, scrub
(2) ***Saccharum***, grass, forest
(3) ***Shorea robusta***, herb, tropical rain forest
(4) ***Acacia catechu***, tree, coniferous forest

24. Which is the reason for highest biomass in aquatic ecosystem-
(1) Nano plankton, blue green algae, green algae
(2) Sea grass, and slime molds
(3) Benthonic and brown algae
(4) Diatoms

25. Pneumatophores are found in-
(1) The vegetation which is found in marshy and saline lake
(2) The vegetation which found in saline soil
(3) Xerophytes
(4) Epiphytes

26. In which of the following plant sunken stomata are found :-
(1) *Nerium*
(2) Hydrilla
(3) Mango
(4) Guava

27. In 1984, the Bhopal gas tragedy took place because methyl isocyanate :-
(1) Reacted with ammonia
(2) Reacted with CO_2
(3) Reacted with water
(4) Reacted with DDT

28. An ecosystem which can be easily damaged but can recover after some time if damaging effect stops will having :-
(1) High stability and low resilience
(2) Low stability and low resilience
(3) High stability and high resilience
(4) Low stability and high resilience

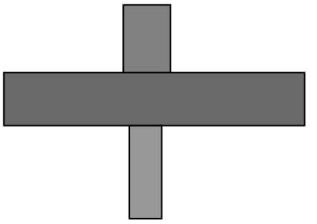
29. In which one of the following habitats does the diurnal temperature of soil surface vary most ?
(1) Forest
(2) Desert
(3) Grassland
(4) Shrub land

30. Identify the correctly matched pair –
(1) Kyoto Protocol – Climatic change
(2) Montreal Protocol – Global warming
(3) Basal Convention – Biodiversity Conservation
(4) Ramsar Convention – Ground water pollution

31. Biodiversity Act of India was passed by the Parliament in the year –
(1) 2002 (2) 1992
(3) 1996 (4) 2000

32. Which of the following is **not** true for a species?
(1) Members of a species can interbreed
(2) Gene flow does not occur between the populations of a species
(3) Each species is reproductively isolated from every other species
(4) Variations occur among members of a species

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



(1) Pyramid of numbers in a grassland

(2) Pyramid of biomass in a fallow land

(3) Pyramid of biomass in a lake

(4) Energy pyramid in a spring

EXERCISE - III ANSWER KEY

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