18 Ecosystem

14.1 Ecosystem: Structure and Function

1. Vertical distribution of different species occupying different levels is called as
   A) Standing crop B) Standing state
   C) Stratification D) Decomposition
   Page-242, Easy

2. Identification and enumeration of plant and animal species of an ecosystem gives its
   A) Productivity
   B) Species composition
   C) Physical structure
   D) Vertical distribution
   Page-242, Easy

3. Which one of the following is odd one out from others
   A) Decomposition
   B) Energy flow
   C) Nutrient cycling
   D) None
   Page-242, Easy

4. The autotrophic components include
   A) Phytoplankton B) Some algae
   C) Marginal plants D) All of these
   Page-242, Easy

5. The decomposers is/are the
   A) Fungi B) Bacteria
   C) Flagellates D) All of these
   Page-242, Easy

6. The consumers is/are
   A) Zooplankton B) Phytoplanktons
   C) Marginal plants D) All of these
   Page-242, Easy

14.2 Productivity

7. What is the basic requirement for any ecosystem to function and sustain.
   A) Primary production
   B) Decomposers
   C) Constant input of solar energy
   D) Nutrient cycling
   Page-242, Easy

8. _____ is defined as the amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis
   A) Gross primary productivity
   B) Primary production
   C) Secondary production
   D) None of these
   Page-242, Easy

9. Primary production is expressed as-
   A) K $Calm^2$ B) K Cal/m^2
   C) g/m^2 D) both B & C
   Page-243, Easy

10. _____ of an ecosystem is the rate of production of organic matter during photosynthesis
    A) Net primary productivity
    B) Secondary production
    C) Gross primary productivity
    D) None of these
    Page-243, Easy

11. Net primary productivity (NPP) equals to
    A) NPP = R – GPP B) GPP – R = NPP
    C) NPP = GPP + R D) GPP = R – NPP
    Page-243, Easy

12. The rate of formation of new organic matter by consumers is called as
    A) primary productivity
    B) Gross primary productivity
    C) Secondary productivity
    D) Respiratory loss
    Page-243, Easy

13. Primary productivity depends on
    A) Variety of environmental factors
    B) Availability of nutrients
    C) Photosynthetic capacity of plant
    D) All of these
    Page-243, Easy

14. The annual net primary productivity of the whole biosphere is approximately
A) 190 million tons B) 170 million tons
C) 170 billion tons D) None of these
Page-243, Easy

14.3 Decomposition

15. Which one of the following is called as "farmer's friend"?
A) Cow B) Bacteria
C) Earthworm D) Crops
Page-243, Easy

16. Who breaks down complex organic matter into inorganic substances like CO_2, water etc.
A) Crop roots B) Decomposers
C) Grazing Cattle D) None of these
Page-243, Easy

17. The process of breaks down complex organic matter into inorganic substances is called as
A) Fragmentation B) Humification
C) Decomposition D) Leaching
Page-243, Easy

18. Detritus is/are
A) Dead plant B) Dead animals
C) Fecal matter D) All of these
Page-243, Easy

19. The correct way of decomposition
A) Fragmentation → leaching → humification → catabolism → mineralization
B) Fragmentation → leaching → catabolism → humification → mineralization
C) Fragmentation → catabolism → leaching → mineralization → humification
D) Fragmentation → mineralization → catabolism → leaching → humification
Page-243-244, Medium

20. _____ break down detritus into smaller particles
A) Earthworm
B) Detritivores
C) Phytoplanktons
D) Both A & B are correct
Page-243, Easy

21. Bacteria and fungal enzymes degrade detritus into simpler inorganic substances. This process is called as
A) Leaching B) Fragmentation
C) Catabolism D) Humification
Page-243, Easy

22. Humification leads to accumulation of a dark coloured amorphous substance called _____
A) Pectin B) Humus
C) Lignin D) None of these
Page-244, Easy

23. Decomposition rate is slower if
A) Detritus rich in lignin & chitin
B) Rich in nitrogen & sugars
C) Low in nitrogen & chitin
D) Low in lignin
Page-244, Easy

24. _____ favours decompositions
A) Warm & dry environment
B) Warm & moist environment
C) cold & dry environment
D) cold & moist environment
Page-244, Easy

14.4 Energy flow

25. PAR stands for
A) Percent active radiation
B) Photosynthetically active radiation
C) Power angel regulation
D) None of these
Page-245, Easy

26. Plant capture only _____ of the PAR and this amount of energy sustains the entire living world
A) 50 – 60 % B) 40 – 80 %
C) 2 – 10 % D) 20 – 40 %
Page-245, Easy

27. The green plant in the ecosystem are called
A) Primary consumer

B) Producer
C) Secondary consumer
D) None of these
Page-245, Easy

28. Producers in an aquatic ecosystem
A) Phytoplankton B) Algae
C) Zooplanktons D) Both A & B
Page-245, Easy

29. Generally, primary consumers will be
A) Carnivores B) Producers
C) Herbivores D) All of these
Page-245, Easy

30. In ecosystem, GFC stands for
A) Generic flow control
B) Global fund for children
C) Grazing food chain
D) None of these
Page-245, Easy

31. Decomposers are also known as
A) Autotrophs B) Standing crops
C) Saprotrophs D) None of these
Page-245, Easy

32. Based on the source of their nutrition or food, organisms occupy a specific place in the food chain that is known as their
A) Food web B) Trophic level
C) Niche D) Eco level
Page-245, Easy

33. Match the following

	Column I		Column II
i	Plants	a	Lion
ii	Carnivores	b	Phytoplanktons
iii	Herbivores	c	Wolf
iv	Top Carnivores	d	Cow

A) i-b, ii-c, iii-d, iv-a B) i-c, ii-d, iii-b, iv-a
C) i-b, ii-d, iii-a, iv-c D) i-d, ii-b, iii-a, iv-c
Page-245, Easy

34. Each tropical level has a certain mass of living material at a particular time called as the
A) Biomass B) Standing crop
C) Standing state D) None of these
Page-247, Easy

35. The standing crop is measured as the
A) Mass of living organisms
B) Biomass
C) The no. in a unit area
D) All of these
Page-247, Easy

36. Choose the correct sequence –
A) Producer → herbivore → primary carnivore → secondary carnivore
B) Producer → primary carnivore →herbivore → secondary carnivore
C) Primary carnivore → secondary carnivore → herbivore → Producer
D) None of these
Page-247, Easy

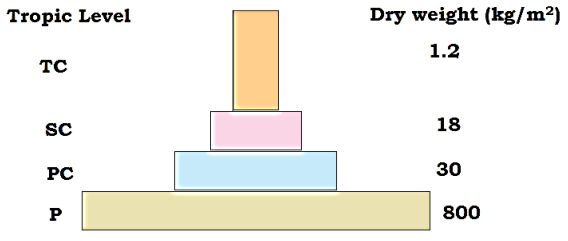
14.5 Ecological Pyramids

37. Ecological pyramids are
A) Pyramid of number
B) Pyramid of energy
C) Pyramid of biomass
D) All of these
Page-247-249, Easy

38. The pyramid of biomass in sea is
A) Always upright
B) Generally inverted
C) Both A & B
D) None of these
Page-249, Easy

39. Pyramid of energy is
A) Always inverted
B) Sometime upright
C) Always upright
D) Sometimes inverted
Page-249, Easy

40. Identify the pyramid

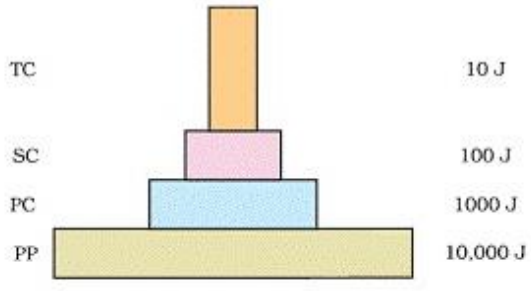


A) Pyramid of number
B) Pyramid of biomass

C) Pyramid of energy
D) None of these

Page-248, Easy

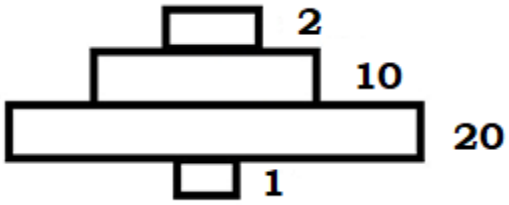
41. Identify the pyramid



A) Pyramid of number
B) Pyramid of biomass
C) Pyramid of energy
D) None of these

Page-249, Easy

42. Identify the pyramid



A) Pyramid of number
B) Pyramid of biomass
C) Pyramid of energy
D) None of these

Page-248, Easy

14.6 Ecological succession

43. A community that is in near equilibrium with the environment is called as
A) Pioneer community
B) Middle community
C) Climax community
D) Sere

Page-250, Easy

44. The gradual and fairly predictable change in the species composition of a given area is called
A) Hydrarch succession
B) Ecological succession
C) Pioneer succession
D) None of these

Page-250, Easy

45. The entire sequence of communities that successively change in a given area are called
A) Ecosystem B) Pioneer
C) Sere D) All of these

Page-250, Easy

46. Areas where primary succession occurs
A) Bare rock
B) Newly cold lava
C) Newly created pond
D) All of these

Page-250, Easy

47. Secondary succession begins in areas where
A) No living organism are there
B) Lost all the living organism
C) Natural biotic communities have been destroyed
D) Both B & C

Page-251, Easy

48. Areas where secondary succession occurs
A) Burned and cut forests areas
B) Land that have been flooded
C) Abandoned farm lands
D) All are correct

Page-251, Easy

49. Select the correct statement
A) secondary succession is faster than primary succession
B) primary succession is faster
C) Both are a equal speed
D) None of these

Page-251, Easy

50. The individual transitional communities are termed as
A) Seral stages
B) Pioneer
C) Seral communities
D) Both A & C are correct

Page-250, Easy

14.6.1 Succession of plants

51. Which type of succession takes place in wet areas
A) Hydrarch succession
B) Xerarch succession
C) Mesarch succession
D) None of these

Page-251, Easy

52. Xerarch succession occurs in
A) Wet areas B) Cold areas
C) Dry areas D) All of these

Page-251, Easy

53. The species that invade a bare area called
A) Sere B) Pioneer species
C) Climax species D) None of these

Page-251, Easy

54. In hydrarch succession the successional series progress from
A) Mesic to hydric condition
B) Hydric to mesic condition
C) Hydric to xeric condition
D) Xeric to mesic condition

Page-251, Easy

55. In xerarch succession, the succession series progress from
A) Xeric to hydric condition
B) Xeric to mesic condition
C) Mesic to xeric condition
D) None of these

Page-251, Easy

56. Which one of the following occur as a pioneer species on rocks
A) Bryophytes
B) Phytoplankton
C) Lichens
D) Blue algae

Page-251, Easy

57. Choose the correct sequence of succession in water
A) Phytoplanktons → rooted-submerged plants → rooted floating angiosperms → free floating plants → reed swamp → marsh-meadow → scrub → the trees → forest
B) Phytoplanktons → free floating plants → rooted-submerged plants → rooted floating angiosperms → reed swamp → scrub → marsh-meadow → the trees → forest
C) Phytoplanktons → rooted-submerged plants → reed swamp → rooted floating angiosperms → free floating plants → marsh-meadow → scrub → the trees → forest
D) None of these

Page-251, Easy

58. Choose the correct statement-
A) All succession whether taking place in water or on land, proceeds to a different climax community
B) All succession whether taking place in water or on land, proceeds to a similar climax community the mesic
C) All succession whether taking place in water or on land, proceeds to a similar climax community the xeric
D) All of these

Page-251, Easy

59. Which one of the following is not the part of hydrarch succession
A) Scrub stage
B) Tree
C) Zooplankton
D) Submerged plant stage

Page-251, Easy

60. During succession some species colonise an area and their population become more numerous whereas population of other species
A) Increases
B) Decline and even disappear
C) Migrate
D) None of these

Page-251, Easy

61. Why does secondary succession is faster?
A) Because soil is already there
B) They have special power
C) Growth of plants is faster
D) All of these

Page-251, Easy

62. The climax community remains _____ as long as the environment remains _____.
A) Unstable, unchanged
B) Stable, unchanged
C) Stable, changed
D) Stable, changed

Page-251, Easy

63. The word (term) use for medium water conditions
A) Xeric B) Hydric

C) Mesic D) None of these

Page-251, Easy

64. Choose the correct sequence
    i) lichens
    ii) Grasses
    iii) Bryophytes
    iv) Higher plants
    v) Forest
    A) i → ii → iii → iv →
    B) i → iii → ii → iv → v
    C) i → iv → ii → iii → v
    D) v → iv → i → ii → iii

    Page-251, Easy

65. in hydrarch succession, after climax with time the water body is converted into
    A) River B) Ocean
    C) Land D) None of these

    Page-251, Easy

66. In hydrarch succession, the pioneer and climax community are respectively
    A) Forest, Phytoplanktons
    B) Phytoplanktons, Forest
    C) Mess, Trees
    D) Lichen, Trees

    Page-251, Easy

14.7 Nutrient Cycling

67. The amount of nutrients such as carbon, nitrogen, phosphorus, calcium etc present in the soil at any given time is referred to as the
    A) Nutrients cycle B) Standing crop
    C) Standing state D) None of these

    Page-253, Easy

68. Standing state varies in
    A) Different kinds of ecosystem
    B) On a season basis
    C) Different kinds of nutrients
    D) Both A & B

    Page-253, Easy

69. The movement of nutrients elements through the various components of an ecosystem can be called
    A) Gaseous cycle
    B) Nutrient cycling
    C) Sedimentary cycle
    D) All of these

    Page-253, Easy

70. Another name of nutrient cycling is
    A) Gaseous cycle
    B) Biological cycle
    C) Biogeochemical cycle
    D) Biophysical

    Page-253, Easy

71. Reservoir for gaseous type of nutrient cycle
    A) Earth's crust B) Rock
    C) The atmosphere D) Water bodies

    Page-253, Easy

72. Reservoir for sedimentary type of Nutrient cycle
    A) Ocean B) Earth's crust
    C) Rock D) Atmosphere

    Page-253, Easy

73. Environmental factor to regulate the rate of release of nutrients into the atmosphere.
    A) Soil
    B) Moisture
    C) Temperature & pH
    D) All of the above

    Page-253, Easy

74. Reason behind nutrients never lost from ecosystem.
    A) Because nutrients present in large amount
    B) Because they are recycled
    C) Because they have no use
    D) All of the above

    Page-253, Easy

14.7.1 Ecosystem-Carbon Cycle

75. Percent of carbon constitutes in dry weight of organism
    A) 60% B) 39%
    C) 49% D) 71%

    Page-254, Easy

76. Which is the first & second most abundant constituent of an organism?
    A) Water, phosphorus
    B) Water, carbon
    C) Carbon, water
    D) Carbon, phosphorus

    Page-254, Easy

77. How much of total quantity of global carbon is dissolved in the oceans?

A) 88% B) 75%
C) 81% D) 71%

Page-254, Easy

78. Carbon cycling occurs through
A) Atmosphere
B) Living & dead organism
C) Ocean
D) All of the above

Page-254, Easy

79. How much at carbon in fixed annually in the biosphere through photosynthesis?
A) 8×10^{12} kg B) 4×10^{12} kg
C) 4×10^{13} kg D) 4.9×10 kg

Page-254, Easy

80. Additional sources for releasing CO_2 in the atmosphere is/are-
A) Burning of wood B) Forest fire
C) Fossil fuel D) All of the above

Page-254, Easy

81. Human activities have significantly increased the rate of released of CO_2 into the atmosphere by
A) Rapid deforestation
B) Massive burning of fossil
C) Both A and B
D) None of the above

Page-254, Easy

14.7.2 Ecosystem-Phosphorus Cycle

82. Phosphorus is a major constituent of
A) Biological membranes
B) Nucleic acids
C) Cellular energy transfer unit
D) All of the above

Page-254, Easy

83. Rock is the natural reservoir of
A) Carbon
B) Nitrogen
C) Phosphorus
D) None at these

Page-254, Easy

84. Herbivores & other animals obtain Phosphorus from
A) Rock B) Plants
C) Ocean D) Lake

Page-254, Easy

85. The waste products and the dead organism are decomposed by _____ releasing phosphorus.
A) Fungi
B) Phosphate-solubilising bacteria
C) Phosphate-unsolubising bacteria
D) None of the above

Page-254, Easy

86. Choose the correct statement.
A) Atmospheric inputs of phosphorus through rainfall are much smaller than carbon inputs.
B) Atmospheric inputs of phosphorus through rainfall are larger than carbon inputs.
C) Atmospheric inputs of phosphorus through rainfall are equal to the carbon inputs.
D) None of the above

Page-254, Easy

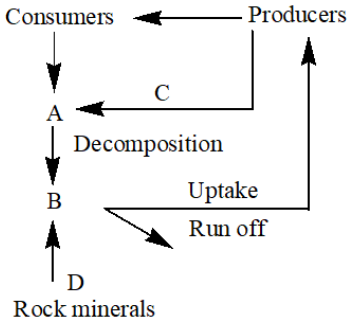
87. Choose the more correct statement.
A) Gaseous exchange at phosphorus b/w organism & environment are very high.
B) Gaseous exchange of phosphorus b/w organism & environment are low.
C) Gaseous exchange at phosphorus b/w organism & environment are negligible.
D) None at these

Page-254, Easy

88. In natural resevoirs, phosphorus present in the form of
A) Phosphite B) Pyrophosphate
C) Phosphates D) None of the above

Page-254, Easy

89. Identify the blanks



	A	B	C	D
A)	Detritus	Weathering	Soil solution	Litter fall

B)	Litter fall	Weathering	Detritus	Soil solution
C)	Weathering	Litter fall	Soil solution	Detritus
D)	Detritus	Soil solution	Litter fall	Weathering

Page-254, Medium

90. Which one of the following is not a Gaseous nutrient cycle?
    A) Oxygen cycle B) Nitrogen cycle
    C) Sulphur cycle D) None of the above

Page-254, Easy

91. Animals need large quantities of phosphorus to make
    A) Shells B) Teeth
    C) Bones D) All of the above

Page-254, Easy

14.8 Ecosystem Services

92. The products of ecosystem processes are named as
    A) Environmental services
    B) Ecosystem goods
    C) Ecosystem services
    D) All of the above

Page-255, Easy

93. Healthy ecosystems are the base for a
    A) Wide range of economic
    B) Environmental
    C) Aesthetic goods & services
    D) All of the above

Page-255, Easy

94. Examples of Ecosystem services
    A) Healthy forest ecosystem purify air & water
    B) Generate fertile soil
    C) Provide storage site for carbon
    D) All of the above

Page-255, Easy

95. _____ & his colleagues have very recently tried to put price tags on nature's life-support services.
    A) Robert frost
    B) Robert Constanza
    C) Robert hook
    D) Robert Clive

Page-255, Easy

96. Researchers have put an average price tag of _____ a year on fundamental ecosystem services.
    A) US $ 33 billion B) US $ 44 billion
    C) US $ 44 trillion D) US $ 33 trillion

Page-255, Easy

97. GNP stands for
    A) Grand national product
    B) Gross national product
    C) Gross national produce
    D) None of these

Page-255, Easy

98. Out of the total cost at various ecosystem services the soil formation accounts for about.
    A) 40% B) 60%
    C) 50% D) 30%

Page-255, Easy

99. The cost of climate regulation & habitat for wildlife are
    A) 8% each B) 6% at overall
    C) 6% each D) None at the above

Page-255, Easy

100. The value of the global GNP
    A) US $ 28 trillion B) US $ 18 Billion
    C) US $ 33 trillion D) US $ 18 trillion

Page-255, Easy

101. Choose the correct statement.
    A) Value of Ecosystem services at biodiversity is difficult to determine.
    B) Value of Ecosystem services of biodiversity is very easy to determine.
    C) No need to determine the value of Ecosystem services.
    D) None of these

Page-255, Easy

ANSWER KEY
ECOSYSTEM

Q	1	2	3	4	5	6	7	8	9	10
Ans	**C**	**B**	**D**	**D**	**B**	**A**	**C**	**B**	**D**	**C**
Q	11	12	13	14	15	16	17	18	19	20
Ans	**B**	**C**	**D**	**C**	**C**	**B**	**C**	**D**	**B**	**D**
Q	21	22	23	24	25	26	27	28	29	30
Ans	**B**	**B**	**A**	**B**	**B**	**C**	**B**	**D**	**C**	**C**
Q	31	32	33	34	35	36	37	38	39	40
Ans	**C**	**C**	**A**	**B**	**D**	**A**	**D**	**B**	**C**	**B**
Q	41	42	43	44	45	46	47	48	49	50
Ans	**C**	**A**	**C**	**B**	**C**	**D**	**D**	**D**	**A**	**D**
Q	51	52	53	54	55	56	57	58	59	60
Ans	**A**	**C**	**B**	**B**	**B**	**A**	**A**	**B**	**C**	**B**
Q	61	62	63	64	65	66	67	68	69	70
Ans	**A**	**B**	**B**	**B**	**C**	**B**	**C**	**D**	**D**	**C**
Q	71	72	73	74	75	76	77	78	79	80
Ans	**C**	**B**	**D**	**B**	**C**	**B**	**D**	**D**	**C**	**D**
Q	81	82	83	84	85	86	87	88	89	90
Ans	**C**	**D**	**C**	**B**	**B**	**A**	**C**	**C**	**D**	**C**
Q	91	92	93	94	95	96	97	98	99	100
Ans	**D**	**C**	**D**	**D**	**B**	**D**	**B**	**C**	**C**	**D**
Q	101									
Ans	**A**									