

Unit–1: Ecology and Ecosystem

1. The term “ecology” was first coined by
a) Haeckel b) Darwin c) Odum d) Elton
2. The study of the relationship between living organisms and their environment is called
a) Anatomy **b) Ecology** c) Taxonomy d) Evolution
3. The word “ecosystem” was first used by
a) E.P. Odum **b) A.G. Tansley** c) Charles Elton d) Linnaeus
4. The smallest unit of the environment that includes both living and non-living components is
a) Population **b) Ecosystem** c) Community d) Biome
5. The abiotic component of an ecosystem includes
a) Plants b) Bacteria **c) Light and temperature** d) Consumers
6. All organisms of the same species living in an area form a
a) Population b) Community c) Ecosystem d) Niche
7. The term “biosphere” refers to
a) Living organisms only
b) Atmosphere only
c) The part of Earth where life exists
d) Hydrosphere only
8. Which of the following is not a biotic factor?
a) Fungi **b) Temperature** c) Insects d) Plants
9. The concept of ecosystem emphasizes
a) Interaction between species
b) Interaction between organisms and environment
c) Classification of plants
d) Evolutionary changes
10. The functional unit of ecology is
a) Community b) Population **c) Ecosystem** d) Biosphere
11. Organisms that can make their own food are
a) Consumers b) Decomposers **c) Producers** d) Parasites
12. Consumers are also called
a) Autotrophs **b) Heterotrophs** c) Phototrophs d) Chemotrophs

13. The self-sustaining ecosystem is
a) Aquarium b) Desert c) Forest **d) Pond**
14. Which of the following shows complete ecosystem characteristics?
a) A pond b) A forest c) A lake **d) All of these**
15. Which one of the following is a man-made ecosystem?
a) Pond **b) Cropland** c) Desert d) Grassland
16. The non-living part of the ecosystem is called
a) Biotic **b) Abiotic** c) Edaphic d) Trophic
17. The physical factors influencing ecosystems are collectively known as
a) Abiotic factors b) Biotic factors c) Producers d) Consumers
18. Soil texture and mineral content are examples of
a) Climatic factors **b) Edaphic factors** c) Biotic factors d) Physiological factors
19. Producers form which trophic level?
a) First b) Second c) Third d) Last
20. Primary consumers feed on
a) Producers b) Carnivores c) Decomposers d) Omnivores
21. Which of the following are secondary consumers?
a) Herbivores **b) Carnivores** c) Producers d) Saprophytes
22. Decomposers mainly include
a) Insects **b) Fungi and bacteria** c) Plants d) Mammals
23. The term “food chain” represents
a) Energy flow b) Nutrient recycling c) Water circulation d) Succession
24. A complex network of food chains in an ecosystem is known as
a) Trophic pyramid b) Food web **c) Energy web** d) Food loop
25. Energy flow in an ecosystem is always
a) Unidirectional b) Cyclic c) Reversible d) Random
26. The ultimate source of energy for all ecosystems is
a) Water **b) Sun** c) Soil d) Minerals
- 27.** Which of the following occupies the top of an energy pyramid?
a) Producers b) Primary consumers c) Secondary consumers **d) Tertiary consumers**
28. In a pond ecosystem, phytoplankton act as
a) Decomposers **b) Producers** c) Consumers d) Predators

29. Energy loss between trophic levels is due to
a) Respiration b) Heat loss c) Excretion **d) All of these**
30. Approximately what percentage of energy is transferred from one trophic level to the next?
a) 1% b) 5% **c) 10%** d) 50%
31. The process by which nitrogen is converted to nitrates by bacteria is
a) Nitrification b) Denitrification c) Ammonification d) Fixation
32. The main reservoir of carbon is
a) Soil **b) Ocean** c) Atmosphere d) Plants
33. Photosynthesis helps in
a) Oxygen consumption **b) Carbon fixation** c) Nitrogen loss d) Mineral leaching
34. Nitrogen fixation is carried out by
a) Algae b) Fungi **c) Rhizobium** d) Protozoa
35. Denitrification is the process of
a) Adding nitrogen to soil **b) Removing nitrogen from soil** c) Forming ammonium d) None
36. Which of the following is a sedimentary cycle?
a) Carbon b) Nitrogen **c) Phosphorus** d) Oxygen
37. The oxygen cycle is closely linked with
a) Carbon cycle b) Nitrogen cycle c) Sulphur cycle d) Phosphorus cycle
38. Water cycle involves
a) Precipitation b) Evaporation c) Transpiration **d) All of these**
39. The process of returning nutrients to soil by decomposers is called
a) Mineralization b) Succession c) Assimilation d) Fixation
40. Sedimentary biogeochemical cycles have
a) Atmospheric reservoir **b) Lithospheric reservoir** c) Hydrospheric reservoir
d) Biospheric reservoir
41. Phosphorus is returned to the soil by
a) Leaching **b) Weathering of rocks** c) Evaporation d) Transpiration
42. Carbon dioxide concentration in the atmosphere increases due to
a) Photosynthesis **b) Combustion** c) Fixation d) Rainfall

43. Which gas is released during respiration?
a) O₂ **b) CO₂** c) N₂ d) H₂
44. In nitrogen cycle, the conversion of ammonium into nitrate is called
a) Nitrification b) Assimilation c) Fixation d) Ammonification
45. The continuous movement of nutrients through environment and organisms is called
a) Food chain b) Energy flow **c) Biogeochemical cycle** d) Ecological pyramid
46. The largest ecosystem on Earth is
a) Forest **b) Ocean** c) Desert d) Grassland
47. Pond is an example of
a) Natural aquatic ecosystem b) Artificial terrestrial ecosystem c) Artificial aquatic d) Marine ecosystem
48. Forest ecosystem is characterized by
a) High biomass b) Low biodiversity c) Low productivity d) Absence of consumers
49. Grassland ecosystem is dominated by
a) Trees b) Shrubs **c) Grasses** d) Climbers
50. Desert ecosystem is generally
a) Wet **b) Dry** c) Snow-covered d) None
51. In aquatic ecosystems, the top zone where light penetrates is called
a) Aphotic b) Littoral c) Limnetic **d) Euphotic**
52. Wetlands are important because they
a) Support migratory birds b) Purify water c) Prevent floods **d) All of these**
53. Mangrove forests are typical of
a) Freshwater **b) Estuarine regions** c) Mountains d) Grasslands
54. Coral reefs are found in
a) Freshwater **b) Saline water** c) Brackish water d) Marshes
55. The most productive ecosystem is
a) Desert b) Open ocean **c) Estuary** d) Tundra
56. Which of the following has least biodiversity?
a) Tropical rainforest **b) Desert** c) Estuary d) Coral reef
57. The main producers in aquatic ecosystems are
a) Phytoplankton b) Zooplankton c) Fish d) Bacteria

58. Grasslands of Africa are known as
a) Pampas b) Prairies **c) Savannas** d) Steppes
59. Arctic tundra is characterized by
a) High temperature **b) Permafrost** c) Dense forests d) Mangroves
60. Estuaries are formed where
a) River meets the sea b) Two rivers join c) Lake meets river d) Glacier meets land
61. Ecological succession is
a) Random change in population
b) Gradual change in community composition
c) Sudden destruction of habitat
d) Genetic variation
62. The first community in succession is called
a) Climax **b) Pioneer** c) Seral d) Intermediate
63. The final stable community is
a) Climax community b) Primary c) Secondary d) Pioneer
64. Primary succession starts on
a) Bare rock b) Fertile soil c) Burnt forest d) Paddy field
65. Secondary succession occurs on
a) Bare rock b) Newly formed island **c) Abandoned cropland** d) Ocean
66. The first organisms to colonize bare rocks are usually
a) Mosses **b) Lichens** c) Ferns d) Grasses
67. In hydrarch succession, the pioneer community is
a) Phytoplankton b) Submerged plants c) Floating plants d) Forest
68. Xerosere starts in
a) Water **b) Desert or dry area** c) Marshland d) River
69. The climax community in xerosere is generally
a) Forest b) Grassland c) Shrubland d) Marsh
70. The predictable series of communities in succession are called
a) Seres b) Stages c) Series d) Levels
71. Hydrosere refers to succession in
a) **Water bodies** b) Desert c) Grassland d) Mountain

72. The main driving force of succession is
a) Climatic change b) Soil erosion c) Human activity d) Random mutation
73. Secondary succession is faster because
a) Soil is absent **b) Soil already exists** c) No water d) No seeds
74. Climax community remains stable because
a) Energy flow stops b) No species change **c) Environment is stable** d) No interaction
75. The climax community in a tropical region is usually
a) Tundra **b) Forest** c) Grassland d) Desert
76. Biome is a large unit characterized by
a) Same species **b) Similar climate and vegetation** c) Soil type d) Water content
77. The largest biome on Earth is
a) Tropical rainforest **b) Ocean** c) Taiga d) Desert
78. The coldest biome is
a) Tundra b) Desert c) Taiga d) Grassland
79. Taiga biome is also known as
a) Coniferous forest b) Temperate forest c) Rainforest d) Savanna
80. The tropical rainforest biome has
a) Low rainfall b) Moderate rainfall **c) High rainfall** d) No rainfall
81. Savanna biome occurs mainly in
a) Africa b) Antarctica c) Arctic d) Himalayas
82. The biome characterized by permafrost is
a) Desert **b) Tundra** c) Rainforest d) Grassland
83. The desert biome receives rainfall less than
a) 250 mm b) 500 mm c) 1000 mm d) 200 mm
84. The temperate deciduous forest biome is dominated by
a) Evergreen trees **b) Leaf-shedding trees** c) Grasses d) Shrubs
85. Tropical rainforests are found near
a) Equator b) Poles c) Tropic of Cancer d) Arctic circle
86. The boreal forest biome is found in
a) Canada and Russia b) Africa c) South America d) Australia

87. The biome with the greatest species diversity is
a) Desert b) Tundra **c) Tropical rainforest** d) Grassland
88. The main vegetation in tundra is
a) Tall trees **b) Mosses and lichens** c) Grasses d) Shrubs
89. The grassland biome of North America is called
a) Steppe b) Pampas **c) Prairie** d) Savannah
90. The desert biome is characterized by
a) High humidity **b) Sparse vegetation** c) Abundant rainfall d) Dense forests
91. In biome classification, climate mainly determines
a) Animal type **b) Vegetation type** c) Soil color d) Altitude
92. Alpine biome is found in
a) Mountains b) Ocean c) Desert d) Plains
93. The biome found in Amazon basin is
a) Tropical rainforest b) Desert c) Savanna d) Grassland
94. Mediterranean biome is known for
a) Evergreen forests **b) Shrub vegetation** c) Mosses d) None
95. The biome covering largest land area is
a) Taiga b) Desert c) Tundra d) Grassland
96. Marine biome includes
a) Ocean and sea b) Pond c) River d) Lake
97. Freshwater biome includes
a) Estuaries **b) Lakes and rivers** c) Oceans d) Mangroves
98. The biome with least rainfall is
a) Desert b) Tundra c) Taiga d) Savanna
99. The largest terrestrial biome is
a) Taiga b) Desert c) Tropical forest d) Grassland
100. The biome with high temperature, high rainfall, and dense canopy is
a) Tropical rainforest b) Desert c) Tundra d) Taiga