

KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Marks scored:

Level : B.Sc.

Year : I

Exam Roll No. :

Time: 30 mins.

Course : ENV5 112

Semester : II

F. M. : 20

Registration No.:

Date : 12-june, 022

SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose and mark [X] against the correct answer.

1. Plowed field is an example of
 Secondary succession Succession
 Primary succession None of these
2. Zone of aeration is important for
 Precipitation Transpiration Infiltration Runoff
3. _____ is a biome where fauna is generally arboreal (tree dwelling).
 Tundra Desert Wetland Tropical rainforest
4. Tundra covers about _____ of the Earth's land surface.
 10% 20% 15% 25%
5. Those heterotrophs which live on dead organic matter are known as _____.
 Scavengers Predators Saprophytes herbivores
6. When both organisms benefit from the association the relationship is called?
 Mutualism Parasitism Commensalism Symbiosis
7. Which one is a type of adaptation?
 Defensive adaptation Fast adaptation
 Slow adaptation Hibernation
8. The word "ecology" was first proposed in the year _____.
 1869 1879 1969 1979
9. The highest level of organization for living things is the _____.
 Atmosphere Pedosphere Biosphere Thermosphere
10. _____ are pesticides used to control mites.
 Insecticides Acaricides Nematicides Rodenticides
11. Methane is about _____ times more effective than CO₂ at trapping heat in the atmosphere.
 20 200 25 300
12. Population _____ is the number of individuals or measurement of population per unit geographic area.
 Size Density Dispersion Growth rate

13. The consumer-resource system is called _____.
 Food web Food chain Detritus Flow webs
14. Methane emissions from waste-water treatment is basically an _____ process.
 Aerobic Anaerobic Fermentation Hydrolysis
15. Tropic levels in a food chain includes _____.
 Producers Consumers Decomposers All of them
16. Lindane is an example of _____.
 Organophosphates Chlorinated hydrocarbons
 Chlorinated pesticides Chloroflorocarbons
17. _____ is a variety of physical, biological and chemical methods to control insect pests.
 IPM DDT CFCs PCBs
18. Index of similarity is calculated by _____, where C is common species, A is number of species present in site 1, and B is number of species present in site 2.
 $2C/A+B$ $A/2C+B$ $2B/A+C$ $C/A+B$
19. _____ is described as the number of individuals per quadrat of occurrence.
 Abundance Occurrence Density Frequency
20. While calculating basal area, "dbh" refers to _____.
 Diameter at breast height Depth at breast height
 Diameter at broad height Deep breadth height

SECTION "B"

[20Q. \times 0.5 = 10 marks]

Fill in the blanks.

21. The movement of individuals out of a population is called _____.
22. An age-specific summary of the survival pattern of a population is called a _____.
23. _____ is an organism's role in the community, particularly in relation to food with other species.
24. A place where a plant or animal can get the food, water, shelter, and space it needs to live is called a _____.
25. The maximum population size that can be supported by the available resources is _____.
26. Disease is an example of a density-_____ factor.
27. The climax community of a region is always its _____ plant species.

28. Growth of a plant is dependent on the amount of foodstuff which is presented to it in minimum quantity is called _____.
29. Population dispersion depends on _____ distribution.
30. _____ is a graphical representation of number of individuals per unit area of various trophic levels.
31. _____ describes the process of accumulation of chemicals in an organism over time to a potentially lethal level.
32. _____ is a replacement of populations in habitat as it moves toward a stable state.
33. Azolla is a _____ type of hydrophytes.
34. Pesticides that kill variety of organisms, including beneficial as well as target pests is called _____.
35. Alternative way to control pests that involves the use of naturally occurring disease organisms, parasite or predators to control pests is called _____.
36. Natural substance produced by animals to stimulate a response in other members of the same species is called as _____.
37. _____ allows an animal to look, sound, or act like another animal to fool predators.
38. An orchid on tropical trees is an example of _____ relationship.
39. A science of relationships between living organisms and their environment is called _____.
40. _____ is a close relationship between two organisms from different species.



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Level : B.Sc.
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Time : 2 hrs. 30 mins.

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Semester : II
F. M. : 55

SECTION "C"

[3Q. × 7 = 21 marks]

Attempt *ALL* questions.

1. Describe different causes of global climate change.
2. Define water pollution. Give an account of the different water pollutants in an ecosystem.
3. What are pesticides? What are alternatives to pesticides?

SECTION "D"

[34 marks]

4. Write short notes on: [4Q × 3 = 12]
 - a. Symbiotic relationship
 - b. Biogas
 - c. Agroecology
 - d. Biological oxygen demand
5. Differentiate between (*ANY FOUR*): [4Q × 2 = 8]
 - a. Gaseous and particulate emission of air pollutants
 - b. R and K reproductive strategies
 - c. Bioaccumulation and biomagnification
 - d. Food web and food chain
 - e. Line and area source of air pollutants
6. Give reasons (*ANY FOUR*): [4Q × 2 = 8]
 - a. Protective coloration allows animals to blend into its environment
 - b. In xerophytic adaptation, leaf surface is modified to decrease transpiration.
 - c. Increased greenhouse gas emissions contribute to global warming.
 - d. Coral reefs are storehouses of biodiversity
 - e. Temperature and precipitation helps to determine where organisms can live
7. Why population of species is important factor for any kind of ecosystem? Explain. [6]

OR

Answer the following questions.

[3Q × 2 = 6]

- a. What are quadrats?
- b. Why do you need to calculate the size and number of quadrats?
- c. Write three applications of quadrat use in ecological studies.

