

KATHMANDU UNIVERSITY
End Semester Examination
June/July, 2023

Marks Scored:

Level : B.Tech.

Year : II

Exam Roll No. :

Time: 30 mins.

Course : ENVS 201

Semester : I

F. M. : 20

Registration No.:

Date 04 JUL 2023

SECTION "A"

[40 Q. × 0.5 = 20 marks]

Mark [X] in the most appropriate option.

1. Lead toxicity leads to inhibit _____.
 Oxygen absorption Haem synthesis
 Protein production CO₂ sink
2. Saturated or unsaturated, branched or straight chained criteria pollutant
 Hydrocarbons N₂O CH₄ Carbon dioxide
3. The biome with sparse plant cover, typically shrubs is called as
 Tundra Desert
 Wetlands Tropical rainforest
4. Species are relocating to areas with more tolerable climate conditions.
 Range shifts Stress Predation Disease
5. Troposphere extends up to _____.
 8-10 km 10-50 km 15-25 km None
6. Reddish brown gas, strong pungent odour and highly soluble in water.
 Nitrogen dioxide Nitrous oxide
 Nitrous oxide TDT
7. According to a study of 2008, fungicides use in Nepal is
 50 % 57 % 60 % 76 %
8. An age-specific summary of the survival pattern of a population is
 Life table Survivorship curve
 Pyramid Pyramid curve
9. Biogas is composed of _____ methane.
 25 % to 50% 1% to 2% 50% to 75% 5% to 10%
10. The study of factors that affect the growth and decline of populations.
 Population pyramid Survival curve
 Demography Life table

11. Mark-recapture method is an example of determination of population _____.
 Density Size Growth rate None
12. Movement of individuals out of a population.
 Immigration Emigration
 Migration-in Migration-out
13. The nitrogen based chemical fertilizer is formed mainly by
 Combustion Biological nitrogen fixation
 Natural process Haber-Bosch process
14. Scavengers are those animals that feed on other animals that they
 have killed have not killed have died All of them
15. Those animals which kill and consume their prey
 Scavengers Predators Saprophytes herbivores
16. An interbreeding group of individuals of a single species that occupy the same general area
 Population Community Ecosystem Biome
17. The sequence of organism through which the energy flows is known as
 Food chain Food long chain
 Food web Food energy
18. The thickness of inner core, which is in a crystalline state because of the influence of heat and high pressure, is
 1370 km 1200 km 1270 km 1300 km
19. Foot fungus on human is an example of
 Mutualism Parasitism
 Commensalism None of the above
20. The conversion of complex organic matter to soluble organic molecules.
 Hydrolysis Fermentation Methanogenesis Acetogenesis

Fill in the blanks.

21. The solid part of the earth is called as _____.
22. Water returning to a liquid state from a gaseous state is _____.
23. At higher latitudes, sunlight strikes earth at tilted angle and thus light energy is more diffuse, which leads to _____ variation in sunlight.
24. The portion of the earth where life exists is called _____.
25. Leaf surface modified to decrease transpiration is a type of _____ adaptation in terrestrial flora.

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26. All _____ that directly or indirectly affect the environment is biotic factors.
27. The population remains relatively constant over a number of years when the number of births equals the number of deaths is _____.
28. The food chain which depends mainly on the influx of organic matter produced in another system is called as _____.
29. Saprophytes include those heterotrophic plants, fungi, and bacteria which live on _____.
30. Those which can synthesize their own food from inorganic compounds and a usable energy source is called _____.
31. Living together with another organism in close association is called _____.
32. Nitrogen-fixing bacteria on legume nodules is an example of _____.
33. Food web is also known as _____ resource system.
34. The system approach that combines a variety of physical, biological and chemical methods to control insect pests is called _____.
35. Malathion is an example of an _____.
36. The assemblage of interacting populations that inhabit the same area is called _____.
37. Topological food webs indicate a _____.
38. The movement of a chemical from the surrounding medium into an organism is called _____.
39. Pesticides that kill variety of organisms, including beneficial as well as target pests is called _____.
40. It allows an animal to look, sound, or act like another animal to fool predators _____.

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SECTION "B"
[3Q × 7 = 21 marks]

Attempt *ALL* questions.

1. Describe the negative implications of pesticide application and its alternatives?
2. Describe effects of air pollution on human, vegetation and different components of ecosystem?
3. Describe on different factors that affect ecology of agriculture?

SECTION "C"

4. Write short notes on: [4Q × 3 = 12 marks]
 - a. Biogas and its sources
 - b. Uncontrolled and controlled anaerobic digestion
 - c. Key features of populations
 - d. Survivorship curve
5. Differentiate between (*ANY FOUR*): [4Q × 2 = 8 marks]
 - a. Sun leaves and shade leaves
 - b. R and K reproductive strategies
 - c. Avoiders and tolerators
 - d. Broad-spectrum and narrow-spectrum pesticides
 - e. Exponential and logistic growth
6. Give reasons (*ANY FOUR*): [4Q × 2 = 8 marks]
 - a. Predation is a density-dependent factor.
 - b. Rain shadow effect on leeward side.
 - c. Leaves of desert plants are reduced to spines.
 - d. Dissolved oxygen is important for aquatic life.
 - e. Wetlands are good source of methane.
7. Discuss on Liebig's law of the minimum and Shelford's law of tolerance? [6]

OR

List the following.

[3 × 2 = 6]

- a. How do you determine the size of the quadrat?
- b. Why do we need to determine the size of the quadrat?
- c. Write two applications of similarity index in ecological study.