

2024

(FYUGP)

(1st Semester)

ZOOLOGY

(Major)

Paper Code : ZOO/C2(T)

(Principles of Ecology)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

***The figures in the margin indicate full marks
for the questions***

- 1. Discuss the different levels of ecological organization in detail. Illustrate your answer with examples to demonstrate how these levels interact with each other and contribute to the overall functioning of an ecosystem. 15**

Or

Discuss the ecology in wildlife conservation and management.

2. Discuss the concepts of survivorship curves in population ecology. Explain the different types of survivorship curves. Analyze how age ratio and sex ratio impact population dynamics. Illustrate with appropriate diagrams.

8+7=15

Or

Discuss the equations and patterns of population growth, focusing on the concepts of r-strategies and K-strategies. Explain the mathematical models used to describe these patterns.

15

3. Discuss the Lotka-Volterra equations for competition and predation. Explain the mathematical models underlying these equations, and analyze their ecological implications.

15

Or

Discuss the various types of population interactions in an ecosystem. Explain the ecological significance of these interactions and provide examples.

(3)

4. Write the key characteristics of ecological communities. Explain the concepts of species diversity and species abundance. 5+5+5=15

Or

What is ecological succession? Explain the differences between primary and secondary succession. Explain the characteristics of the stages of succession. 2+8+5=15

5. Discuss the concept of energy flow through an ecosystem. Explain the role of producers, consumers and decomposers in the energy transfer process. 15

Or

Explain the key processes involved in the nitrogen cycle. Illustrate your answer with detailed diagram and provide examples to highlight the ecological significance of each process.

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