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ZOOLOGY

(Honours)

Paper : ZOO-HC-1026

(Principles of Ecology) .

(Theory)

Full Marks : 60

Time : 3 hours

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

1. Choose the correct answer :   1×7=7

    (a) Which is the first process in ecological succession?

        (i) Nudation   (ii) Migration

        (iii) Ecesis   (iv) Aggregation

    (b) Which is not the characteristic of a population?

        (i) Natality   (ii) Mortality

        (iii) Stratification   (iv) Sex ratio

(c) The ratio between energy flow at different points in a food chain is

    (i) ecological capacity

    (ii) ecological efficiency

    (iii) ecological potential

    (iv) ecological assimilation

(d) Which of the following is a 'k'-selected species?

    (i) Fungus   (ii) Human

    (iii) Grass   (iv) Beetle

(e) The structural and functional unit of ecology is

    (i) biome

    (ii) ecosystem

    (iii) biosphere

    (iv) All of the above

(f) In addition to their role in ecosystem, the value of wildlife is also found in

    (i) education

    (ii) recreation

    (iii) aesthetics

    (iv) All of the above

  (g) The ecological study of individual organism or species is called

    (i) autecology

    (ii) community ecology

    (iii) synecology

    (iv) population ecology

2. Write short notes on the following :   2×4=8

  (a) Laws of limiting factors

  (b) Gause's competitive exclusion principle

  (c) Density-dependent population regulation

  (d) Detritus food chain

3. Write on/Answer any *three* of the following :

                5×3=15

  (a) The strategies associated with 'r'- and 'k'-selected species

  (b) The role of ecology in wildlife conservation

  (c) Compare and contrast between exponential and logistic growth.

  (d) Concepts and utilities of life tables in population ecology

  (e) Lotka-Voltera equation for competition and predation

4. Elaborate on the different group attributes of a population.   10

<center>*Or*</center>

Discuss the theories pertaining to climax community.   10

5. Elaborate with an example, the concept of ecological succession.   10

<center>*Or*</center>

Describe the process of nitrogen cycle.   10

6. What is a food chain? What are its basic types and forms? Highlight one example explaining the mode of energy flow in an ecosystem.   2+5+3=10

<center>*Or*</center>

Write short notes on the following :   5+5=10

(a) Survivorship curves

(b) Age and sex ratio

<center>★ ★ ★</center>