

### 3 (Sem-1/CBCS) ZOO HC 2

2019

#### 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



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- (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

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- (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 :  $2 \times 4 = 8$

- (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 :  $5 \times 3 = 15$

- (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-Volterra equation for competition and predation



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

Or

Discuss the theories pertaining to climax community. 10

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

Or

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

Or

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

(a) Survivorship curves

(b) Age and sex ratio

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