

Total number of printed pages-4

3 (Sem-1/CBCS) ZOO HC 2

2020

(Held in 2021)

ZOOLOGY

(Honours)

Paper : ZOO-HC-1026

(Principles of Ecology)

Full Marks : 60

Time : Three hours

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

1. Choose the correct answer : 1×7=7

(a) The random pattern of distribution of the individuals of a population over space is :

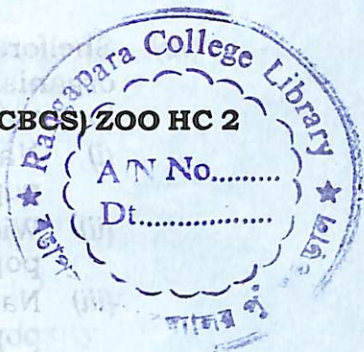
(i) Natality

(ii) Density

(iii) Dispersion

(iv) Both (ii) and (iii).

Contd.



(b) Shelford's law of tolerance suggests that organisms with a wide tolerance limit for environmental factors show :

- (i) Narrow distribution with low population
- (ii) Wide distribution with high population
- (iii) Narrow distribution with high population
- (iv) Wide distribution with low population.

(c) The ability of a population to increase under ideal environmental conditions is :

- (i) Carrying capacity
- (ii) Absolute natality
- (iii) Biotic potential
- (iv) Natality.

(d) Soil changes due to erosion is an example of :

- (i) Allogenic succession
- (ii) Autogenic succession
- (iii) Computational succession
- (iv) Emigrational succession.

(e) Which of the following is mainly responsible for wildlife extinction ?

- (i) Pollution
- (ii) Hunting
- (iii) Habitat destruction
- (iv) All of the above.

(f) Population size is best represented by :

- (i) Density
- (ii) Mortality
- (iii) Natality
- (iv) Community.

(g) What is an edge effect ?

- (i) Community complexity
- (ii) Community classification
- (iii) Community stability
- (iv) Community diversity at the transition boundary.

2. Write short notes on the following :
(any four) 2×4=8

- (a) Nutrient cycling
- (b) Ecological efficiency
- (c) Ecesis
- (d) Abiotic components of ecosystem
- (e) Biome
- (f) Kaziranga National Park.

3. Answer the following : **(any three)** 5×3=15

- (a) Autecology vs Synecology.
- (b) Density-independent factors of population regulation.

- (c) Vertical stratification of a community.
- (d) Concept of ecotone with *one* example.
- (e) Life tables and survivorship curves.

4. Discuss the concepts of Gause's competitive exclusion principle with *one* example.

10

OR

Highlight the major types of population interactions. Elaborate the Lotka-Volterra equations for competition and predation.

4+6=10

5. Discuss the different types of community characteristics with suitable examples.

10

OR

Write short notes on :

5+5=10

- (a) Ecological pyramid
- (b) Human-modified ecosystem.

6. Highlight on the strategies involved for *ex-situ* conservation and management of wildlife.

10

OR

Compare and contrast between 'r'- and 'K'-strategies with necessary examples.

5+5=10