

This question paper contains 4 printed pages]

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S. No. of Question Paper : 7896

Unique Paper Code : 2231102

F-1

Name of the Paper : **Perspective in Ecology [DC-1.2]**

Name of the Course : **B.Sc. (Hons.) Zoology**

Semester : **I**

Duration : **3 Hours**

Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *Five* questions in all including

Question No. 1, which is compulsory.

1. (a) Define the following :

5

(i) Edge effect

(ii) Saprophage

(iii) Metapopulation

(iv) Biosphere

(v) Eutrophication.

(b) Distinguish between the following :

8

(i) Physiological and ecological longevity

P.T.O.

- (ii) Autogenic and allogenic succession
 - (iii) Amensalism and commensalism
 - (iv) Autecology and synecology.
- (c) Illustrate the following with the help of well labelled diagrams (no description required) : 4
- (i) Levels of organization
 - (ii) Sigmoid growth curve.
- (d) Name the scientists associated with the following terms : 4
- (i) Trophic niche
 - (ii) Ecology
 - (iii) Exponential growth curve
 - (iv) Life tables.
- (e) Fill in the blanks : 2
- (i) Maximum theoretical production of new individuals under ideal conditions is known as
 - (ii) Species which occupy similar niches in different geographical regions are called

- (iii) The shape of the age pyramid in a stable population is
- (iv) The primary cause of loss of biodiversity is
- (f) Give reasons for the following : 4
- (i) Phytoplanktons have higher turnover rate.
- (ii) Secondary succession is faster than primary succession.
2. (a) What is population dynamics ? Explain the density-dependent factors that regulate the growth of a population. 10
- (b) Define Liebig's law of minimum with an example. 2
3. (a) With the help of equations, discuss the possible outcomes between two species competing for the same resource. 8
- (b) Enumerate the predator's responses to changing prey densities. 4
4. (a) What is ecosystem development ? Explain the process of primary succession in a community up to climax stage. 9
- (b) Briefly explain vertical stratification in a forest ecosystem. 3
5. (a) Explain the Universal model of energy flow in an ecosystem. 9
- (b) Differentiate between grazing and detritus food chain. 3

6. Explain different strategies for the conservation of wildlife. Add a note on the application of ecology in wildlife conservation. 12
7. Write short notes on any *three* of the following : 4,4,4
- (a) Dispersal
 - (b) Population density
 - (c) Food web
 - (d) Ecological efficiency
 - (e) Trends in human population growth.