

This question paper contains 3 printed pages]

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S. No. of Question Paper : 889

Unique Paper Code : 223503

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Name of the Paper : Ecology (ZOHT 508)

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

Semester : V

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 :

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(i) Compensatory predation

(ii) Biotic Potential

(iii) Ecotypes

(iv) Metapopulation

(v) Fecundity

(vi) Synecology

(vii) Peck-order

(b) Differentiate the following :

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(i) Niche and Habitat

(ii) Commensalism and Mutualism

(iii) Dispersal and Dispersion

P.T.O.

- (iv) Scramble and Contest Competition
- (v) Gully Erosion and Rill Erosion
- (vi) Allopatric and Sympatric Speciation
- (c) Give contributions of the following scientists : 4
  - (i) A.G. Tansley
  - (ii) G.F. Gause
  - (iii) Joseph Grinnell
  - (iv) Ernst Haeckel
- (d) Illustrate the following with the help of diagrams ONLY (No description required) : 4
  - (i) Zonation in pond
  - (ii) Universal energy flow model
- 2. (a) Define survivorship curves with emphasis on their significance. Explain the different types of curves with suitable examples.
- (b) Describe the various types of life tables. 8+4
- 3. (a) Describe the various density dependent and independent factors which affect the population growth.
- (b) What is species diversity ? Give Shannon-Weiner index of diversity and explain it. 8+4
- 4. (a) Explain with suitable diagrams and equations the exponential and sigmoid growth form of populations.
- (b) Discuss r- and k- strategies of populations. 8+4

5. (a) How does a predator respond to a change in prey density ?  
(b) What is Ecological Succession ? Give the differences between pioneer and climax community.  
(c) Give the Lotka-Volterra equations for prey and predator. 6+4+2
6. (a) Explain the Gauss's experiments on competition.  
(b) What are r-and k- related species ? Explain. 6+6
7. Write short notes on any *three* of the following : 4+4+4
- (i) Biogeochemical Cycles
  - (ii) Sigmoid growth form of populations.
  - (iii) Laws of Tolerance
  - (iv) Terrestrial Ecosystem
  - (v) Raunkiaer's life forms