[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 8637 **C** **Roll No.....**

Unique Paper Code : 223503

Name of the Paper : ZOHT-508 : Ecology

Name of the Course : B.Sc. (Hons.) Zoology, Part – III

Semester : V

Duration : 3 Hours

Maximum Marks : 75

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

Instructions for Candidates :

Attempt **five** *questions in all including Question No.* 1 *which is compulsory.*

Q1. a) Define the following:

i. Ecological equivalents
ii. Biotic potential
iii. Resilience
iv. Allelopathy
v. Peck order

5

b) Distinguish between the following:

i. Unitary and modular population
ii. K-selected and r-selected species
iii. Commensalism and amensalism
iv. Fecundity and fertility
v. Allopatric and sympatric species

5

c) Give equations for the following:

i. Lotka –Volterra for prey-predator interaction
ii. Shannon-Wiener diversity index

4

d) Name the pioneer scientists associated with the following terms:

i. Ecosystem
ii. Multidimensional niche
iii. Ecology
iv. Logistic growth equation

4

P.T.O.

e) Fill in the blanks:
i. pH of natural precipitation is _____.
ii. Pattern of dispersion most commonly observed in nature is _____.
iii. The total dry weight or the caloric content of organisms present at any one time in an ecosystem is called _____.
iv. The body size of the animals in colder regions is _____than in the warmer regions.
v. Endogenous rhythm of physiological or behavioral activity lasting for 24 hr is called _____. 5

f) Give reasons for the following:
i. Ecotone is called the zone of stress.
ii. Complete competitors cannot coexist. 4

Q2. a) What do you understand by population dynamics? How do various density dependent factors regulate the population growth?
b) Give the significance of life tables. 9, 3

Q3. a) What is a community? Briefly describe the abiotic and biotic components of a pond ecosystem.
b) Compare the universal and Y-shaped energy flow models with the help of suitable diagrams. 6, 6

Q4. a) What is ecosystem development? Explain the process of succession on an igneous rock up to climax stage.
b) Give differences between pioneer and climax community. 9, 3

Q5. a) What are different types of inter-specific competition? Explain Gause's principle with the help of a laboratory experiment.
b) What are different types of functional responses of a predator? 9, 3

Q6. Write short notes on **any three** of the following:

a) Dispersal
b) Shelford's law of tolerance
c) Role of microbes in nitrogen cycle
d) Application of ecology in wild life conservation
e) Grassland ecosystem 4, 4, 4