2021
Zoology
(ECOLOGY)
[First Semester]
Paper - C2T
Full Marks : 40
Time : 2 hours
The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in their own words as far as practicable.
Illustrate the answers wherever necessary.

1. **Answer any five from the following.**   **2×5=10**

   a) Distinguish between autecology and synecology.

   b) Define Ecosystem.

   c) What is species diversity?

   d) Distinguish between edges and ecotone.

   e) What is ecological efficiency?

(2)

f) Difference between in-situ and ex-situ consservation.

g) What do you mean by species richness?

h) What is wild-life protection act?

2. **Answer any four from the following :** **5×4=20**

a) Discuss about the types of food chains.

What is γ-diversity? 3+2

b) Define survivorship curve. Explain different types of survivorship curves with the help of suitable example.

c) Discuss about the competitive exclusion theory by Paramecium sp. 5

d) What is the definition of carrying capacity (k)?

Prive it $- \left[\dfrac{dn}{dt} = rN\left(1 - \dfrac{N}{k}\right) \right]$

e) What is Biosphere? Explain briefly about the Odum's two channel models of energy flow.

f) Schematically show the process of nitrogen cycle. 5

3. **Answer any one from the following :**   **10×1**

a) What is competitive co-efficient? Deduce the Lotka-Volterra equation from competition on the basis of under mention consequences–   [2+8]

(i) Species 2 elemenated.

(ii) Species 1 eleminatate.

(iii) Either species 1 or species 2 eleminated.

(iv) Both species coexist.

b) Briefly describe Liebig & Law of minimum and Shelford's Law of tolerance.

Differentiate between r-selected and k-selected species.

Give two examples each of short-day plants & long-day plants.   (4+4)+2