U.G. 2nd Semester Examination - 2022

ZOOLOGY
[HONOURS]

Course Code : ZOOL-H-CC-T-03

Full Marks : 40   Time : $2\frac{1}{2}$ 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.

1. Answer any **five** questions: 2×5=10

    a) Name two nitrogen fixing bacteria.

    b) How many organization levels exist in ecosystem?

    c) Give examples of two national parks of India and two wildlife sanctuaries of West bengal.

    d) Distinguish between fertility and fecundity.

    e) What are 'Halosere' and 'Nudation' in succession?

    f) Define ecotone and edge-effect.

    g) What is 'multidimensional niche'?

    h) Explain species richness with an example.

2. Answer any **two** questions: 5×2=10

    a) Enumerate five differences between Autecology and Synecology.

    b) Explain 'Liebig's law of minimum' and 'Shelford's law of tolerance'.

    c) Draw and describe different types of survivorship curves.

    d) Write brief note on: Wildlife Protection Act (1972)

3. Answer any **two** questions: 10×2=20

    a) What are dynamic life table and time-specific life table? Calculate mortality ratio (q_x) and expectancy of life (e_x) from the given life table: 3+7

    TABLE-1

 | A cohort table of 530 gray squirrels | |
    | --- | --- |
    | Age (x) | Number of individual (n_x) |
    | 0 | 530 |
    | 1 | 159 |
    | 2 | 80 |
    | 3 | 48 |
    | 4 | 21 |
    | 5 | 5 |

    b) Compare r-selection and k-selection. Determine Simpson's index (S) and Shannon-Wiener index (H) from the provided sample data.   4+6

TABLE-2

Species (i)	No. In sample (n_i)
Short horn grasshopper	60
Ladybug beetle	10
Bushbrown butterfly	25
Orbweaver spider	1
Common jezebel butterfly	4

c)   Describe a detritus food chain with example. Explain the graph given below alongwith the labels used there.   4+6

TABLE-3
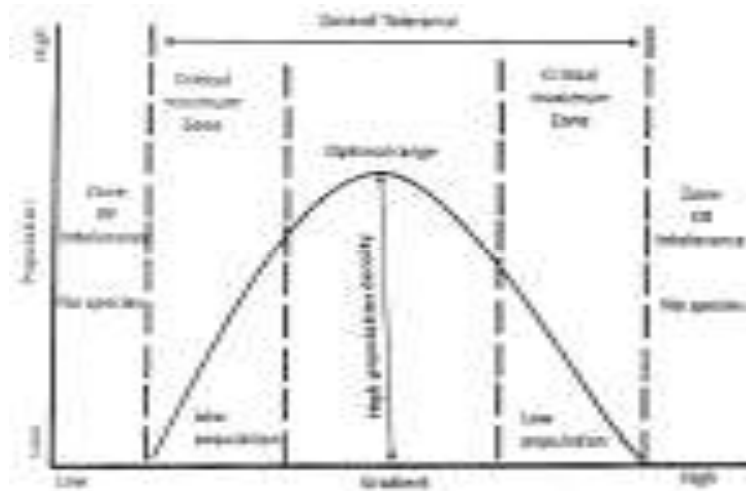
d)   Write briefly about (any **two**):   5+5

   i)   Gause's principle explaining niche separation

ii)   Pros & Cons of Ex-situ conservation

iii)   Box & Pipe model depicting 10% law.

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