



‘সমানো মন্ত্র: সমিতি: সমানী’

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 1st Semester Examination, 2021

CC2-ZOOLOGY

ECOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** questions from the following: 1×5 = 5
- (a) What is beta-diversity?
 - (b) What do you mean by ‘ecological natality’?
 - (c) Point out two limitations of ‘pyramid of numbers’.
 - (d) What is meant by ‘species abundance’?
 - (e) Succession which begin in an area where adequate moisture is present is called _____ (Fill in the blank).
 - (f) When energy is transmitted to consumer level, it follows the second law of thermodynamics. (Write ‘True’ or ‘False’)
 - (g) What do you mean by ‘carrying capacity’?
 - (h) r-selection population has
 - (i) Low rate of population increase
 - (ii) Short life span
 - (iii) Low fecundity rate
 - (iv) Low biotic potential (Choose the correct option)
2. Answer any **three** questions from the following: 5×3 = 15
- (a) With suitable examples describe the detritus food chain. Comment on links between grazing and detritus food chain. 3+2
 - (b) What are survivorship curves? With suitable diagrams, illustrate different types of survivorship curves. 1+4
 - (c) As per Lotka-Volterra equation of competition, what will be the condition when $\alpha < \frac{k_1}{k_2}$, $\beta < \frac{k_2}{k_1}$? How it was deduced? 1+4
 - (d) What do you mean by biodiversity? Give an account of the factors regulating species diversity. 2+3
 - (e) List the IUCN technical guidelines for the management of *ex-situ* conservation. 5

3. Answer any *two* questions from the following: 10×2 = 20
- (a) Differentiate between Autecology and Synecology. Write a note on vertical stratification. Elaborate universal model of energy flow through the ecosystem. 2+2+6
- (b) Write a note on successional communities. Discuss on phases of succession in a hydrosere. 4+6
- (c) What is biogeochemical cycle? Give an account of nitrogen cycle with an appropriate diagram. 2+8
- (d) Point out four major objectives of wildlife conservation. Comment on various approaches for the conservation and management of tiger in India. Add a note on trade or commerce in wild animals, animal articles and trophies as per Wildlife Protection Act (1972). 2+5+3

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