

POST-GRADUATE DEGREE PROGRAMME
Term End Examination — December, 2024
ENVIRONMENTAL SCIENCE (PGES)
Paper – ENVS CC103 : ENVIRONMENTAL BIOLOGY
(Under CBCS from January 2024 Enrolment Session)

Time : 2 hours

Full Marks : 50

Weightage of Marks : 80%

Special credit will be given for accuracy and relevance in the answer. Marks will be deducted for incorrect spelling, untidy work and illegible handwriting. The weightage for each question has been indicated in the margin.

1. Answer any *five* of the following : 2 × 5 = 10
 - a) Define Last Universal Common Ancestor (LUCA).
 - b) What is meant by prebiotic environment ?
 - c) What is one basic concept of natural selection ?
 - d) Define genetic drift.
 - e) What is meant by trophic level ?
 - f) Define climax community.
 - g) What is species diversity ?
 - h) What is the definition of biological hotspot ?

2. Answer any *four* of the following : 5 × 4 = 20
 - a) Give a brief account of components of prebiotic environment and their origin.
 - b) With the help of a model explain flow of energy in the ecosystem.
 - c) Define temperate coniferous forest. Enumerate the characteristic features of the plants of this biome. 2 + 3
 - d) Give a brief account of effect of light on plant life.
 - e) Explain with one example, the role of origination and extinction in the formation of biodiversity.
 - f) Write a note on strategies of biodiversity conservation.

g) With the help of a diagram, explain role of methanogenesis in the ecosystem.

h) Explain with diagram the ecological pyramid in a grassland.

3. Answer any *two* of the following : 10 × 2 = 20

a) Give a detail account of the factors that promote biodiversity and the factors responsible for loss. How will you measure species diversity and evenness ? 4 + 6

b) Give a detail account of origin of living cell and origin of multicellularity. Add a note on Cambrian explosion. 6 + 4

c) What are biogeochemical cycles ? Explain with suitable diagram, the global C-cycle with a note on methanogenesis. 2 + 8

d) What is plant succession ? Mention the basic types of plant succession. What are the general process of succession ? Explain the concept of ecotone. 2 + 2 + 4 + 2

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