2022
BOTANY
[P.G.]
(M.Sc. Fourth Semester End Examination-2022)
PAPER-403
Ecology and Biodiversity

Full Marks: 40   **Time: 02 Hrs**

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

Group-A

1. **Answer any FOUR questions from the following:**   4x2= 8

a) What is biodiversity? Who first coined the term?

b) Mention two ecological values of biodiversity.

c) Name the biodiversity hotspots in India.

d) Point out the difference among alpha, beta and gamma diversity.

e) Differentiate between red data book and blue data book.

f) What is gene bank?

g) Give four examples of Ramsar sites in India.

h) What is the difference between Simpson's index and Simpson's index of diversity?

Group-B

2. **Answer any four questions from the following:**   4x4 = 16

a) What do you understand by megadiverse countries? Mention the criteria for consideration of megadiverse countries.   2+2

b) Explain the relationship between disturbance and species diversity.

c) What is competitive exclusion principle? Give one natural example.   2+2

d) How does biodiversity help to prevent transmission of infectious diseases? Mention two economic value of biodiversity.   2+2

e) Differentiate between ex situ and in situ conservation.

f) How can invasive species thrive in alien environments? Mention the scientific names of four notorious invasive plants in India.   2+2

Group -C

3. **Answer any two question of the following:**   2x8 = 16

a) Write down the major anthropogenic threat to biodiversity. Briefly discuss the restoration process to stop biodiversity loss.   4+4

b) Write down the role of government initiatives in biodiversity study.   8

c) Write short notes on the following -   2x4

   i) Sanctuary

   ii) Tiger Project

   iii) National park

   iv) Biosphere reserve

d) Differentiate between keystone species and dominant species, name two indices each for measuring species richness and species evenness of an ecosystem, calculate the biodiversity in terms of species richness of the following community.

Species X=1, Species Y=3, Species W=2, Species Z=8, Species U =1.   2+2+4