

**TDC (CBCS) Even Semester Exam., 2023**

**ECOLOGY AND ENVIRONMENTAL SCIENCE**

**( Honours )**

**( 4th Semester )**

**Course No. : EESHCC-401T**

**( Systematics and Biogeography )**

Full Marks : 50

Pass Marks : 20

**Time : 3 hours**

*The figures in the margin indicate full marks  
for the questions*

**SECTION—A**

**Answer any ten of the following questions :**

**2×10=20**

- 1. Write a brief note on the role of cytology in taxonomic identification.**
- 2. What is phytochemistry?**

3. Give a brief account of field inventory.

4. Write a note on DNA barcoding.

5. Define homology and analogy.

6. What do you mean by phenograms?

7. What is Bergmann's rule?

8. Define cosmopolitan species.

9. What is gene flow?

10. What is adaptive radiation?

11. Write a brief note on extinction.

12. Point out the barriers to dispersal.

13. What is Geographic Information System?

14. State the uses of remote sensing.

15. What is a protected area?

## SECTION—B

Answer any *five* of the following questions :  $6 \times 5 = 30$

16. Give an account of herbarium. Add a note on Botanical Gardens.  $3+3=6$

17. Give an illustrated account of taxonomic databases. 6

18. Write notes on the following :  $3+3=6$   
(a) Parallelism  
(b) Convergence

19. Give a detailed account of Operational Taxonomic Units (OTUs). Add a note on polyphyly.  $4+2=6$

20. Write notes on the following :  $3+3=6$   
(a) Mutation  
(b) Genetic drift

21. Give a detailed account of natural selection. 6

22. Write notes on the following :  $3+3=6$   
(a) Allopatric speciation  
(b) Sympatric speciation

- 23.** Give an illustrated account of ecological diversification. 6
- 24.** Write an essay on the application of biogeographical rules in design of biosphere reserves. 6
- 25.** Describe landscape conservation with special reference o North-East India. 6

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