

SL No of QP 5529

Unique Paper Code: 2182012401

Name of the Course: Systematics and Biogeography

Name of the Programme: B.Sc. Environmental Sciences – Core (DSCC-10)

Semester: IV

Duration: 2 hours

Maximum Marks: 60

Instructions for Candidates

Write your Roll no. on the top immediately upon receipt of this question paper. Answer any four questions. All Questions carry equal marks.

1. (a) How can nomenclatural codes help achieve global consistency in species naming?
Explain using examples from zoological nomenclature. (8)
(b) Explain the biological and ecological significance of using botanical gardens for ex-situ conservation. (7)
2. Write short notes on the following: (3½×4=15)
(a) Role of cytology in taxonomy
(b) Bergmann's Rule
(c) DNA barcoding and its importance
(d) Remote sensing in conservation biogeography
3. Differentiate the following (any three): (5×3=15)
(a) Key-based vs. Field-based taxonomic identification
(b) Cladograms and Phylogenetic trees
(c) Adaptive radiation and Convergent evolution
(d) Biotic vs. Abiotic determinants of communities
4. (a) Define, explain and discuss the relevance of Gloger's Rule and Allen's Rule in biogeographical adaptations. (8)
(b) Discuss the key characteristic features of numerical taxonomy and its roles in evolutionary studies. (7)
5. (a) Critically evaluate the emerging significance of using molecular phylogenetics in understanding evolutionary relationships. (8)
(b) Elaborate upon continental drift and its impact on present-day species distribution patterns. (7)
6. As systematists, which aspect of biogeography do you find most influential for conservation planning? Justify your answer with examples from current protected areas. (15)