[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1808 **L**

Unique Paper Code : 2182012401

Name of the Paper : Systematics and Biogeography

Name of the Course : **B.Sc. Environmental Sciences - Core (DSCC-10)**

Semester : IV

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **four** questions. **All** questions carry equal marks.

1. (a) Define and elaborate upon the concept of nomenclature, typification, taxon, species concept, taxonomic database. (10)

   (b) Explain how cytology, phytochemistry and molecular methods provide evidence for classification. (5)

2. Differentiate between the following : (5×3=15)

   (a) Typological species concept and evolutionary species concept.

P.T.O.

(b) Bentham and Hooker classification and APG III classification.

(c) Monophyly and polyphyly.

3. Write short notes on the following : (3¼×4=15)

(a) International Code of Botanical Nomenclature

(b) International Code of Zoological Nomenclature

(c) Names of hybrids

(d) Rejection of names

4. (a) Explain rooted, unrooted and ultrametric phylogenetic trees. (8)

(b) Discuss the significance of cladograms in reconstructing evolutionary relationships. (7)

5. (a) Explain Gloger's rule, Bergmann's rule, Allen's rule and Geist rule. (8)

(b) Apply these rules to explain variation in body colour, body size and appendage size among animals of different climatic regions. (7)

6. Discuss the types and processes of speciation with reference to allopatric, parapatric and sympatric speciation, adaptive radiation, ecological diversification, convergent evolution and parallel evolution. (15)