(ii) Paleoendemics and Neoendemics

(iii) Sciophytes and Heliophytes

(iv) Natural selection and artificial selection

4. (a) Describe the various types of ecological pyramids? (5)

(b) Explain the Y-shaped energy flow model in an ecosystem. (5)

(c) Discuss the history of life on earth briefly with appropriate examples. (5)

5. (a) Define the term Phytogeography. Name the different botanical provinces of India. Give elaborate accounts of any two. (8)

(b) What is speciation? Explain the different modes through which speciation occurs. (7)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5871 **J**

Unique Paper Code : 2162512401

Name of the Paper : Ecology and Evolution

Name of the Course : **B.Sc. Life Science**

Semester : IV

Duration : 3 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. Attempt four questions in all, including question number 1, which is compulsory.
3. All questions carry equal marks.
4. All parts of a question must be answered together.
5. Draw diagrams wherever required.

1. (a) Define the following (any five): (1x5=5)

   (i) Ecotone

   (ii) Biome

   (iii) Homology

   (iv) Climax community

   (v) Soil texture

   (vi) Phylogeny

   (b) State True/ False for the following statements (any five). (1x5=5)

   (i) The diversification of life on Earth over long periods of time is an example of microevolution.

   (ii) Sister taxa along with their common ancestor forms a clade in the phylogenetic tree.

   (iii) The zone of eluviation is the part of a soil profile where materials like clay particles, humus and salts accumulate from other layers.

   (iv) Competition and predation influence population growth irrespective of population density.

   (v) Regeneration of forest after land slide is an example of secondary succession.

   (c) Match the following: (1x5=5)

(i) Ginkgo biloba	A. Fossil
(ii) Orchids	B. Symbiosis
(iii) Lichens	C. Phylloclade
(iv) Stromatolites	D. Paleoendemic
(v) Opuntia	E. Commensal

2. With the help of well labelled diagrams, explain any three of the following: (5x3=15)

   (i) Soil Profile

   (ii) Survivorship curves

   (iii) Hydrosere

   (iv) Nitrogen cycle

3. Differentiate between the following (any three): (5x3=15)

   (i) Biological species concept and Phylogenetic species concept