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M.Phil/2nd Sem/LSC/19

2019

M. Phil 2nd Semester Examination

**LIFE SCIENCE**

**Paper : LSC-129**

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**(Plant Evolution and Diversity)**

**Group - A**

**(Marks : 8)**

1. Answer any *four* questions : 4 × 2
- a) Distinguish between divergence and convergence.
- b) Define DNA - Bar Coding. State its importance.
- c) What is the basic mechanism in force for evolution ?
- d) How do the taxonomists' and breeders' views differ in defining 'Species' ?
- e) What is telome ? Who proposed telome theory ? 1 + 1
- f) Write the name of an arborescent lycopsid. Mention its age of occurrence.

*[ Turn Over ]*

( 2 )

**Group - B**

**(Marks : 16)**

2. Answer any *four* questions : 4 × 4
- a) Explain evolutionary importance of photosynthesis.
  - b) What are Phenograms and Cladograms ? State their importance.
  - c) Illustrate the constancy of allele frequency in a population claimed by Hardy-Weinberg principle. Mention the conditions to be maintained for the validity of the principle. 2 + 2
  - d) Explain allopatric speciation. Contrast with the parapatric speciation. 2 + 2
  - e) Write a short note on cooksoniod group of early vascular plants.
  - f) Discuss about the contrivances for cross pollination.

**Group - C**

**(Marks : 16)**

3. Answer any *two* questions : 2 × 8
- a) Name four different types of aquatic plants (with families) common in aquatic landscapes and prepare a brief note on their growth forms. 4 + 4
  - b) Explain 'Handicap principle' in adaptive evolution with suitable examples. What is sexual dimorphism ? 6 + 2
  - c) Who established the group progymnospermopsida ? Write the basis of this establishment. Name the orders belonging to this group. Illustrate different vegetative and reproductive structures of Archaeopteris. 1 + 2 + 1 + 4