PG Even Semester Examination, May 2025

LIFE SCIENCE & BIOINFORMATICS

4th Semester

Course No. : LS - 651 (B)

(Phanerogamic Botany)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer all questions)

1. Describe various types of modifications observed in root and shoot morphology in plants. Explain the adaptive significance of those modifications with suitable examples and diagrams. [10+4=14]

OR

2. Describe the type and structure of inflorescence in Ficus (Fig) and Helianthus (Sunflower). Discuss the evolutionary significance of these unique inflorescence type in relation to their pollination strategies. [4+4+6=14]

3. Write notes on following: [4x3.5=14]

   (a) Stelar structure

(Turn Over)

(b) Meristematic tissue

(c) Complex tissue

(d) Interxylary phloem

OR

4. What do you mean by anomalous secondary growth? Discuss the abnormal behaviour of normal cambium. State the significance of anomalous secondary growth in plant. [2+10+2=14]

5. Differentiate between microsporogenesis and megasporogenesis. With the help of suitable diagram, describe the process of megasporogenesis. [4+10=14]

OR

6. Write notes on the following: [4x3.5=14]

(a) Somatic embryogenesis

(b) Apomixis

(c) Double fertilization

(d) Polyembryony

7. Define with example: [4x3.5=14]

(a) Homonym

(b) Taxonomic synonym

(c) Basionym

(d) Valid publication of a name

OR

8. Write down the role of AFLP markers in plant systematics with proper examples. [14]

9. How does numerical taxonomy use phenetic similarity to construct phylogenetic relationship? What are the potential pitfalls of relying solely on similarity-based approaches for determining evolutionary relationship? [10+4=14]

OR

10. Writes notes on following: [6+8=14]

(a) Role of botanical garden in taxonomy, research and ex-situ conservation

(b) Zingiberales as per APG-IV (2016) classification

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