

**2022**  
**M.Sc.**  
**First Semester**  
CORE – 04  
**BOTANY**  
*Course Code: MBOC 1.41*  
(Plant Morphology & Anatomy)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Write a detailed note on cell-to-cell communication in the SAM during shoot development. 14
2. Discuss on the functions and interactions among key genes and their products in maintenance and development of the shoot apex. 14

**UNIT-II**

3. With illustrative diagrams describe the general structure of the leaf of higher plants. How does Kranz anatomy influence the functional aspects of C4 plants? 9+5=14
4. Which region of the SAM differentiates into epidermis? Trace the development of the stomata from pavement cells with an illustrated note. 14

**UNIT-III**

5. Explain how lateral roots are developed from the pericycle and elaborate on the role of plant growth hormone in its initiation. Briefly describe how roots associate with microbes. 10+4=14
6. Write short notes on the following: 7×2=14
  - (a) Roots as tool for plant systematics
  - (b) Quiescent centre

## UNIT-IV

7. With diagrammatic illustrations, describe the various types of trichomes in plants. Discuss their functions with specific examples.  $3+7+4=14$
8. Write short notes on the following:  $7 \times 2 = 14$
- (a) Stomatal complex
  - (b) Subsidiary cells

## UNIT-V

9. What is cambium? Give an account on anomalous secondary growth in dicots, citing and elaborating on reasons for such abnormal growth. Furnish diagrams wherever appropriate.  $1+10+3=14$
10. Write short notes on the following:  $7 \times 2 = 14$
- (a) Xylem Fibres
  - (b) Wood of *Tectona grandis*
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