

B. Sc. Part-III

BOTANY

Paper-I (Plant Morphology and Anatomy)

Multiple choice question

1. In a modular system leaf, node, internode and associated buds present:
 - (a) Axis
 - (b) Metamer
 - (c) Module
 - (d) Sub-module
2. Which one of the following is an example of primary meristematic tissue?
 - (a) Phellogen
 - (b) Vascular cambium in dicot roots
 - (c) interfascicular cambium
 - (d) intrafascicular cambium
3. Cambium causes growth in:
 - (a) Circumference
 - (b) Width
 - (c) Length
 - (d) All the above
4. Which of the following can be seen in a monocot root?
 - (a) Endarch xylem
 - (b) A large pith
 - (c) No or poorly developed pith
 - (d) Medullary ray
5. Interxylary phloem is formed due to:
 - (a) Formation of accessory strips of cambium
 - (b) Abnormal behavior of normal cambium
 - (c) Anomalous position of cambium
 - (d) Anomalous behavior of abnormal cambium
6. Multiple epidermis found in:
 - (a) *Nerium* leaf
 - (b) Grass leaf
 - (c) Guava leaf
 - (d) Grass stem
7. Leaf arrangement in which upper pair of leaves stand at the right angles to the lower pair is called:
 - (a) Alternate
 - (b) Opposite superposed
 - (c) Opposite decussate
 - (d) Whorled

8. Anisocytic stomata are also called:

- (a) Ranunculaceous type
- (b) Cruciferous type
- (c) Rubiaceous type
- (d) Labiateous type

9. In which plants, respiratory roots are found?

- (a) Hydrophytes
- (b) Xerophytes
- (c) Halophytes
- (d) Hygrophytes

10. Dispersal of fruits by parachute mechanism is found in:

- (a) Mustard
- (b) *Cycas*
- (c) *Orchids*
- (d) Cotton

11. Which of the following is a germination inhibitor?

- (a) Indole acetic acid
- (b) Abscisic acid
- (c) Gibberellic acid
- (d) All the above

12. Plants exactly identical to the parent plant may be obtained by which of the following methods?

- (a) Seeds
- (b) Hybridization
- (c) Stem cutting
- (d) All the above

13. The histogen theory to explain the shoot apical organization was proposed by:

- (a) Nageli
- (b) Schmidt
- (c) Wardlaw
- (d) Hanstein

14. Parenchyma cells are characterized by the presence of:

- (a) intercellular spaces
- (b) uniform thickenings
- (c) lignified walls
- (d) thickenings at the corner

15. Root hairs arise from:

- (a) epiblema
- (b) endodermis
- (c) cortex
- (d) pericycle

Short answer question

1. Where are the hydathodes located? What is the advantage of the presence of these in herbaceous plants?
2. Describe briefly the activity of cambium in monocotyledons.
3. What are cortical bundles and how do they arise?
4. Distinguish the three main categories of meristems on the basis of their position in the plant body.
5. Besides absorption and anchorage, what other function can be attributed to the roots?
6. What are growth rings? How are they formed?
7. How does the anatomy of a dorsiventral leaf differ from that of an isobilateral leaf?
8. What is most unique about the abscission layer?
9. What is secondary dormancy?
10. Name various types of stem cuttings that can be used for vegetative propagation of woody plants.

Long answer question

1. What are the chief features of meristematic tissues? Discuss various types of meristems and their functions.
2. Describe the primary structure of a normal dicot stem with the help of well labelled diagram.
3. Describe the internal structure of a dorsiventral leaf. Give a suitable diagram.
4. What do you understand by suspended animation of seeds? What are its various causes?
5. What is the significance of dispersal of seeds and fruits in nature? Give two examples each of hydrochory and zoochory.