

325301

December 2023

B.Sc. (LIFE SCIENCES) III SEMESTER

Botany III Plant Anatomy and Embryology (BLS-301)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.
2. Answer any four questions from Part-B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.
4. Supplement the answers with relevant diagrams where necessary.

PART-A

1. (a) Define apomixis. (1.5)
(b) What is double fertilization? Explain its significance. (1.5)
(c) What is the difference between pits and plasmodesmata? (1.5)
(d) Discuss the strategies for seed dispersal. (1.5)
(e) What is a suspensor? Give its functions. (1.5)

- (f) Define trichomes and identify its types with function. (1.5)
- (g) Identify characteristics of xerophytes. (1.5)
- (h) Differentiate between adcrustation and incrustation. (1.5)
- (i) Draw a diagram to highlight the various components of the epidermal system. (1.5)
- (j) What is the difference between hardwood and sapwood? (1.5)

PART-B

2. (a) Explain the structure of shoot and root apex. Support the answer with relevant diagrams. (10)
- (b) Explain polyembryony and give its significance. (5)
3. (a) What is stomata? Discuss its use and types. (5)
- (b) Why is flower considered as modified determinate shoot? (10)
4. What is secondary growth? Discuss its pattern in roots and shoots. Does it lead to generation of wood? (15)
5. (a) Give a comparative account of the structure of monocot root and shoot. (5)
- (b) Discuss the types of tissues found in plants with their function. (10)

6. (a) Describe the mechanism of pollination and the various adaptations. (10)
- (b) What are ergastic substances? Discuss. (5)
7. Describe the general pattern of embryo development. (15)