

**CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN,  
NUVEM-GOA  
SEMESTER END EXAMINATION, JANUARY 2022**

**Semester: III B.Sc. Course: BOTANY DSC - BOC103 (Plant Anatomy and Embryology)**

**Total Marks: 80    Date:                      Duration: 2 Hours    Total No. of Pages: 02**

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**Instructions:** 1. All questions are compulsory; however internal choice is available.  
2. Figures to the right indicate full marks.  
3. Draw appropriate diagrams wherever necessary.

**Q. I. Answer any six of the following: (2 x 6 = 12)**

1. What is aerenchyma? State its function.
2. What are tracheids? State their function.
3. Define concentric vascular bundles.
4. How would you differentiate anatomically a dicot root from a monocot root?
5. Give two points of difference between geitonogamy and xenogamy.
6. List any two functions of endosperm.
7. Classify ovules on the basis of position of micropyle with respect to the funiculus.
8. What is integumentary tapetum?

**Q. II. Answer any five of the following: (4 x 5 = 20)**

1. What is meristematic tissue? Classify meristems based on their position.
2. Comment on the leaf anatomy of monocots.
3. Define polyembryony. Add a note on cleavage of proembryo.
4. What is adventive apomixis?
5. What is anther dehiscence? Comment on the secondary thickening in endothecium.
6. State the characteristics of anemophilous flowers.
7. List any 4 functions of the anther tapetum.

**Q. III. A. Explain how secondary growth takes place in a typical dicot stem. (6)**

**OR**

- A. With the help of a labelled diagram, describe the anomalous secondary growth in *Dracaena* stem. (6)
- B. Describe the structure and function of periderm. (6)

Q. IV. A. Describe the various epidermal appendages. (6)

OR

A. Give an account of types of stomata on the basis of number and arrangement of subsidiary cells. (6)

B. Explain the characteristic anatomical features of xerophytes. (6)

Q. V. A. Draw a labelled diagram of a L.S. of ovule and state the function of each part. (6)

OR

A. Describe the process of formation of microspores from sporogenous tissue in an anther. (6)

B. With the help of a diagrammatic representation explain the formation of bisporic 8-nucleate embryo sac. (6)

Q. VI. A. Explain the development of monocot embryo with the help of a diagram. (6)

OR

A. Explain nuclear type of endosperm formation. Support your answer with suitable examples. (6)

B. Explain any three mechanisms of fruit and seed dispersal with suitable examples. (6)

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