

**CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN, NUVEM-GOA**  
**SEMESTER END EXAMINATION (ONLINE MODE), JANUARY 2021**

Semester: **III B.Sc.**

Subject: **BOTANY – DSC**

Course name and Code: **Plant Anatomy and Embryology – BOC 103**

Max. Marks: **40**

Date: **05/01/2021**

Duration: **2 Hours**

Total No. of pages: **01**

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**Instructions:** 1. All questions are *compulsory*.  
2. Figures to the *right* indicate *maximum* marks allotted to the question.  
3. Draw labelled diagrams *wherever* necessary.

**Q. I.** Answer **any five** of the following in brief: (5 x 2 Marks = 10)

- i. Distinguish between primary and secondary meristems.
- ii. How would you differentiate anatomically a dicot root from a monocot root?
- iii. What are growth rings?
- iv. What are stinging hair?
- v. List any four characteristics of anemophilous flowers.
- vi. Give two points of difference between dicot and monocot embryo.
- vii. Draw a labeled sketch of L.S. of ovule.
- viii. Draw sketches of any 4 types of microspore tetrads.

**Q. II.** Answer **any six** of the following: (6 x 5 Marks = 30)

1. Describe the anomalous secondary growth in *Bignonia* stem.
2. Describe the structure of periderm.
3. Explain the characteristic anatomical features of xerophytes.
4. Explain nucellar polyembryony.
5. Explain dichogamy and heterostyly as barriers for self-pollination with suitable examples.
6. Animals play an important role as agents in fruit and seed dispersal. Justify.
7. Describe the stages in development of male gametophyte.
8. Draw a suitable sketch and explain the formation of *Polygonum* type of embryo sac.

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