(6 pages) **Reg. No. :** .....

Code No. : 6587 **Sub. Code : KBOM 23/ PBOM 23**

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Second Semester

Botany

ANATONY, EMBRYOLOGY AND MORPHOGENESIS

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The Tunica-Corpus model seeks to explain growth and development of ———————— meristem.

   (a) apical (b) root

   (c) lateral (d) intercalary

2. Apical dominance is based on the activity of

   (a) gibberellins (b) cytokinns

   (c) auxins (d) absissic acid

3. The term 'xylem' was introduced by

(a) Nageli (b) Nawaschin

(c) Strasburger (d) Esau

4. A companion cell is a specialized type of

(a) parenchyma cell (b) xylem cell

(c) sieve element (d) plasmodesmata

5. Wood is produced by

(a) xylem (b) phloem

(c) sclerenchyma (d) vascular cambium

6. The major part of annual rings is formed by

(a) spring wood (b) autumn wood

(c) both (a) and (b) (d) none of the above

7. The function of endothecium is

(a) nutritional (b) mechanical

(c) dehiscence (d) protection

8. Double fertilization is characteristics of

(a) Bryophytes (b) Gymnosperms

(c) Angiosperms (d) Monocots

9. Which of the following is NOT used as a model to study plant morphogenesis?

(a) Arabdiopsis

(b) Mangifera

(c) Zea

(d) Fucus

10. Which of the following is used for cell to cell signaling is plant?

(a) sugars

(b) proteins

(c) hormones

(d) all the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

Draw neat and labeled diagrams wherever necessary.

11. (a) Explain apical dominance in plants. Add a note on its importance.

Or

(b) What are the characteristics of a meristematic cells?

12. (a) With neat and labeled diagrams, explain the structure of a bordered pit.

Or

(b) Write a short notes on xylen tracheids.

13. (a) Differentiate between hardwoods and softwoods.

Or

(b) Write a short note on dendrochronology and its applications.

14. (a) How are pollen grains arranged?

Or

(b) Describe the causes and types of polyembryony.

15. (a) What are the different types of symmetry observed in plants?

Or

(b) Define polarity. Give an examples for the development of polarity in plants.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

Draw neat and labeled diagrams wherever necessary.

16. (a) What are the events leading to programmed Cell Death in plants?

Or

(b) Give an account of primary and secondary meristems.

17. (a) Explain the components of xylem with neat diagrams.

Or

(b) Explain the role of companion cells in plants.

18. (a) What is trichomes? Add a note on different types of trichomes and functions.

Or

(b) Write a short account of the natural defects present in wood.

19. (a) What are the barriers to fertilization?

Or

(b) Describe the process of formation of the embryo sac.

20. (a) What are the factors controlling morphogenesis?

Or

(b) How do environmental factors affect differentiation?

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