

(6 Pages)

Reg. No. :

Code No. : 5703

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M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

Botany — Core

PLANT ANATOMY, EMBRYOLOGY AND
MORPHOGENESIS

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Wound healing in plants is initiated by —————

- (a) Apical meristem
- (b) Lateral meristem
- (c) Secondary meristem
- (d) Intercalary meristem

2. Lateral meristem is responsible for —————

- (a) Growth in length
- (b) Growth in cortex
- (c) Growth in thickness
- (d) Growth in parenchyma

3. Which of the following tissue is involved in water conduction?

- (a) Xylem and phloem
- (b) Tracheids and trachea
- (c) Sclerenchyma and parenchyma
- (d) Xylem fibres and bast fibres

4. Secondary growth includes the formation of secondary vascular tissues and

- (a) Periderm
- (b) Plerume
- (c) Epidermis
- (d) Cortex

5. Which of the following is not a cause of the decay of timber?

- (a) Lack of ventilation
- (b) Alternate dry and wet conditions
- (c) Absence of moisture
- (d) Moisture accompanied by heat

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6. ————— defects is indicated by red/yellow tinge in wood.

- (a) Froxiness (b) Druxiness
(c) Callus (d) Burls

7. Longest microspores are seen in

- (a) *Drimys* (b) *Drosera*
(c) *Zostera* (d) *Zygogynum*

8. The innermost wall layer of pollen sac is tapetum whose function is

- (a) Protection (b) Nutrition
(c) Dehiscence (d) Mechanical

9. Which of the following mediums is composed of chemically defined compounds?

- (a) Natural media (b) Artificial media
(c) Synthetic media (d) None of the above

10. Morphogenesis is brought about through a limited repertoire of variations in cellular processes within these two types of arrangements

- (a) The direction and number of cell divisions and cell shape changes
(b) Pollination
(c) Fertilization
(d) None of these

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PART B — (5 × 5 = 25 marks)

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

11. (a) Write notes on apical meristem.

Or

(b) What is the meristem tissue and where is it found?

12. (a) Describe the formation of periderm.

Or

(b) Explain the structure of lenticels.

13. (a) List out the mechanical properties of wood.

Or

(b) Illustrate the development of trichome.

14. (a) What are the different types of embryos?

Or

(b) How will you store the pollen grains?

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15. (a) Which of the types of symmetry do plants process?

Or

- (b) Which hormone is essential for morphogenesis?

PART C — (5 × 8 = 40 marks)

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

16. (a) Write an essay on seasonal activity of vascular cambium.

Or

- (b) Give an account on root apical meristem and its importance.

17. (a) Describe the secondary structure of phloem.

Or

- (b) Discuss on phylogenetic trends and specialization of phloem.

18. (a) Explain ontogeny of monocot leaves with illustrations.

Or

- (b) Write an essay on development of stomata.

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19. (a) Give an account on polyembryony.

Or

- (b) Illustrate the megasporogenesis.

20. (a) How polarity expressed in internal and external structures? Discuss.

Or

- (b) Describe effect of environment on differentiation.

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