

(7 pages)

Reg. No. : .....

Code No. : 5821

Sub. Code : WBOM 22

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second Semester

Botany — Core

PLANT ANATOMY AND EMBRYOLOGY OF  
ANGIOSPERMS

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions, choose the correct answer.

1. Which of the following is called duramen?  
(a) Periderm (b) Bark  
(c) Sapwood (d) Heartwood
2. Plasmodesmata are  
(a) Lignified cemented layers between cells  
(b) Connections between adjacent cells  
(c) Membranes connecting the nucleus with the plasmalemma  
(d) Locomotory structures

3. Dendrochronology is also known as  
(a) Tree ring counting  
(b) Physical anthropology  
(c) Pedology  
(d) Glacial valve chronology
4. Fascicular cambium found in dicotyledonous stem is a  
(a) Primary meristem  
(b) Apical meristem  
(c) Secondary meristem  
(d) Intercalary meristem
5. Who proposed the glycolate hypothesis for opening of stomata?  
(a) Zelitch (b) Witham  
(c) Blaydes (d) Srivastava
6. Which of the following regulate the opening and closing of stomata?  
(a) Epidermal layer (b) Pores  
(c) Guard cell (d) Subsidiary cells

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7. Male gametes in angiosperms are formed by the division of
- Generative cell
  - Vegetative cell
  - Microspore mother cell
  - Microspore
8. Pollen grain walls are known as
- Sporopollenin
  - Sporoderm
  - Stomium
  - Tapetum
9. Tapetum, the middle layers, the endothecium, and the epidermis are
- Layers of pollen sacs
  - Wall of another
  - Layers of pollen grains
  - Epidermal
10. Entry of pollen tube through micropyle is
- Chalazogamy
  - Mesogamy
  - Porogamy
  - Pseudogamy

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11. Which of the following pair have haploid structures?
- Nucellus and antipodal cells
  - Antipodal cells and egg cell
  - Antipodal cells and megaspore mother cell
  - Nucellus and primary endosperm nucleus
12. Point out the odd one
- Nucellus
  - Embryo sac
  - Micropyle
  - Pollen grain
13. Which is may be defined as occurrence of two or more embryos in one ovule?
- Polyembryony
  - Nucellus
  - Parthenocarps
  - Embryogenesis
14. Which is the formation of fruit without fertilization is known as?
- Polygamy
  - Parthenogenesis
  - Polyembryony
  - Parthenocarp
15. A fruit which is develop from monocarpellary superior and dehisces by one ventral suture only is called as
- Drupe
  - Follicle
  - Legume
  - Pome

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PART B — ( $5 \times 4 = 20$  marks)

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

Each answer should not exceed 250 words.

16. (a) What are pits? Explain their types.

Or

- (b) Summarize the functions of plant cell wall.

17. (a) Describe the normal secondary thickening of dicot stem.

Or

- (b) Explain the various types of mounting media.

18. (a) Explain the development of an anther and the formation of microspores in angiosperms.

Or

- (b) Explain the pollen analysis.

19. (a) Illustrate the *Allium* type of female gametophyte development.

Or

- (b) Discuss about double fertilization.

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20. (a) Write the significance of polyembryony and parthenocarpy.

Or

- (b) Summarize the significance of fruit development.

PART C — ( $5 \times 8 = 40$  marks)

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

Each answer should not exceed 600 words.

21. (a) Explain the origin of vascular cambium.

Or

- (b) Elaborate the mechanical properties of wood.

22. (a) Enumerate the types of stomata.

Or

- (b) Describe the anomalous secondary thickening of Monocots.

23. (a) Describe the development of male gametophyte in Angiosperms.

Or

- (b) Explain the structure, types and function of Tapetum.

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24. (a) Describe the various types of ovules.

Or

(b) Describe the various types of endosperms.

25. (a) Enumerate the types of Apomixis and its significance.

Or

(b) Classify the polyembryony and write its significance.

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