

Reg. No: .....

Code No.: SS5587

Sub. Code: KBOM23/PBOM23

M.Sc. (CBCS) DEGREE SPECIAL SUPPLEMENTARY  
EXAMINATION, April -2020

Second Semester

Botany

ANATOMY, 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. Meristem responsible for increase in girth or diameter is
  - (a) Apical meristem
  - (b) Intercalary meristem
  - (c) Lateral meristem
  - (d) none of these

2. The concept of quiescent centre was proposed by
  - (a) Clowes in maize
  - (b) Schmidt in rice
  - (c) Nageli in oat
  - (d) Buvat in Arabidopsis
3. Lenticels are involved in
  - (a) Gaseous exchange
  - (b) food transport
  - (c) photosynthesis
  - (d) transpiration
4. Companion cells in plants are associated with
  - (a) vessels
  - (b) sperms
  - (c) sieve elements
  - (d) guard cells
5. Age of a tree can be estimated by
  - (a) Biomass
  - (b) number of annual rings
  - (c) diameter of its heartwood
  - (d) its height and girth

6. Stomata in grass leaf are
- (a) heart shaped      (b) Kidney shaped
- (c) Oval shaped      (d) Dumb-bell shaped
7. Perisperm is a remaining part of
- (a) endosperm      (b) nucellus
- (c) ovule      (d) integument
8. Male gametes in angiosperms are formed by the division of
- (a) generative cell
- (b) vegetative cell
- (c) microspore mother cell
- (d) microspore
9. The origin and development of plant form and structure is called \_\_\_\_\_
- (a) Plant Morphogenesis
- (b) Developmental Biology
- (c) Evolutionary Biology
- (d) Cell Growth

10. The establishment of differences at the two ends of a structure is known as \_\_\_\_\_
- (a) Polyspermy      (b) Polarity
- (c) Synagamy      (d) Symmetry

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Briefly discuss the shoot apical meristem.
- Or
- (b) Explain the seasonal activity of cambium.
12. (a) Explain the structure and formation of periderm.
- Or
- (b) Briefly discuss about phloem elements.
13. (a) Comment on Kranz anatomy.
- Or
- (b) Briefly explain trichome development

14. (a) Pollen allergy-Discuss.

Or

- (b) Explain the types of tapetum and discuss their functions.

15. (a) Explain the effect of environment on differentiation

Or

- (b) Comment on symmetry.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain programmed cell death (PCD)

Or

- (b) Discuss the origin and structure of vascular cambium.

17. (a) Write an account on xylem.

Or

- (b) Discuss the anomalous secondary growth in dicot plants with example.

18. (a) Explain about various properties of wood.

Or

- (b) Give an account on ontogeny of dicot leaf.

19. (a) Describe the structure and development of microsporogenesis.

Or

- (b) Give an account on polyembryony.

20. (a) Polarity- Discuss.

Or

- (b) Factors controlling morphogenesis-Discuss.