

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019  
(Second Semester)

Branch-BOTANY

ANATOMY AND EMBRYOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10x1 = 10)

- 1 The vascular bundles in a monocot stem are typically
  - (i) Radial
  - (ii) Concentric
  - (iii) Biocollateral
  - (iv) Collateral
- 2 The outermost layer of an aerial root is
  - (i) Epidermis
  - (ii) Exodermis
  - (iii) Limiting Layer
  - (iv) Pliferous layer
- 3 The testa gives rise to form
  - (i) outer integument
  - (ii) inner integument
  - (iii) inner epidermis
  - (iv) none of the above
- 4 The epicarp of fruit wall is otherwise called
  - (i) Exocarp
  - (ii) Mesocarp
  - (iii) Endocarp
  - (iv) Pericarp
- 5 Bisporangiate anthers are seen in the members of
  - (i) Malvaceae
  - (ii) Cruciferae
  - (iii) Compositae
  - (iv) Ranunculaceae
- 6 In the monocot type of development of anther wall, the middle layer arise from
  - (i) Outer secondary parietal layer
  - (ii) Iner secondary parietal layer
  - (iii) Either (i) or (ii)
  - (iv) None of these
- 7 The role of double fertilization in angiosperms is to produce
  - (i) Endosperm
  - (ii) Integuments
  - (iii) Cotyledons
  - (iv) Endocarp
- 8 Milky water of green coconut is
  - (i) Liquid nucleus
  - (ii) Liquid of female gametophyte
  - (iii) Liquid endosperm
  - (iv) Liquid chalaza
- 9 True polyembryony refers to the occurrence of
  - (i) Two or ore embryos in the ovary
  - (ii) More than one embryo in the ovary
  - (iii) More than one embryo in an ovule
  - (iv) More than one pollen tubes in an ovule
- 10 The development of embryo from nucellus and integument is known as
  - (i) Apospory
  - (ii) Apogamy
  - (iii) Apomixis
  - (iv) Adventive embryony

Cont...

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SECTION - B (35 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 7 = 35)

11 a Describe the secondary growth in dicotyledonous leaf.

**OR**

b Discuss the internal morphology of a monocot leaf.

12 a Write notes on floral anatomy.

**OR**

b Give an account of the anatomy of the fruit wall.

13 a Explain the structure of anther wall with diagram.

**OR**

b Write notes on Palynology.

14 a Explain the structure of ovule.

**OR**

b Give an account of the Helobial endosperm.

15 a Discuss the types of polyembryony.

**OR**

b Write an account on Apomixis.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

16 Explain the anatomical structure of monocotyledonous roots.

17 Compare the anatomical features of cotyledons and hypocotyledons.

18 Explain how the pollen tube enters into the embryo sac.

19 Explain any two types of embryo sac with diagrams.

20 Discuss the phenomenon of Parthenocarpy.

**Z-Z-Z**

END