

8.12.18 (M)

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **210** **I**

Unique Paper Code : 42164301

Name of the Course : **B.Sc.(Prog.)**

Name of the Paper : Plant Anatomy and Embryology

Semester : III

Time : 3 Hours **Maximum Marks : 75**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt **five** questions in all, including question number **one** which is **compulsory**.
- (c) Draw well-labelled diagrams wherever necessary.
- (d) All parts of the questions should be answered together.

1. (a) Fill in the blanks :

1×5=5

- (i) Xylem is generally reduced in plants.
- (ii) Interfascicular cambium in dicot stem differentiates from cells belonging to

P.T.O.

- (iii) The microgametophyte of angiosperms is commonly known as
- (iv) In type of embryo sac development, all the cells of embryo sac have the same genetic constitution.
- (v) is a fleshy out growth of integument which covers the seed more or less completely and is often considered as an integument.
- (b) Give the appropriate term for the following :
1×5=5
- Stomata with three unequal subsidiary cells.
 - Maturation of male and female parts of a flower at different times.
 - Ovule in which micropyle, chalaza and funiculus are in one straight line.
 - Root tissue which gives rise to lateral roots.
 - Tissue generally composed of dead cells with thick secondary walls.
- (c) Draw well-labelled diagrams of the following :
2.5×2=5
- T. S. *Hydrilla* stem
 - T. S. tetrasporangiate anther with amoeboid tapetum and spore tetrads

2. Write short notes on any **five** of the following :
3×5=15
- Heart wood
 - Male germ unit
 - Polyembryony
 - Antipodal cells
 - Root apex
 - Stomata
3. Differentiate between any **three** of the following :
5×3=15
- Anemophily and Entomophily
 - Tunica Corpus theory and Korper-Kappe theory
 - Monocot root and monocot stem
 - Apospory and Diplospory
4. Answer briefly any **five** of the following :
3×5=15
- What is the biological significance of seed dispersal phenomenon ? Elaborate on any **one** mechanism of seed dispersal.
 - What is microgametogenesis ? Describe the process with suitable diagrams.
 - What are annular growth rings and how are they formed ?

- (d) What is the importance of endosperm ? How does nuclear endosperm develop ?
- (e) What are the distinguishing features of collenchyma ? Write a note on the types and functions of collenchyma.
- (f) What is periderm and how is it formed ?

5. Comment on any **three** of the following :

5×3=15

- (a) Egg cell and synergid cells are structurally and functionally different.
- (b) Phloem has cells with unique structure.
- (c) Tapetum is an important anther wall layer.
- (d) Xerophytes possess special anatomical features.

6. Attempt any **three** of the following :

5×3=15

- (a) Write a brief account on development of a dicot embryo from a zygote.
- (b) Discuss the significance of cross pollination. Write a note on the floral adaptations that favour cross pollination.
- (c) With the help of suitable diagrams, describe secondary vascular growth in dicot roots.
- (d) Write a detailed note on epidermis.