9/12/19 M

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7335 J

Unique Paper Code : 42164301

Name of the Paper : Plant Anatomy and Embryology

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

Semester : III

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** question in all, including question number **1,** which is compulsory.
3. Attempt **all** parts of questions together.
4. Draw well labelled diagrams wherever necessary.

1. (a) Fill in the blanks (attempt any **five**) (1×5=5)

   (i) The spongy multiple epidermis found in aerial roots of epiphytes is known as .....

   (ii) The Tunica-Corpus theory is proposed by .....

P.T.O.

(iii) Lateral roots originate from .....

(iv) Type of collenchyma in which the thickenings are mainly at the angles of the cells is known as .....

(v) ..... is the fleshy outgrowth of integument at the micropylar region in seed that helps in dispersal and germination.

(vi) Persistent nucellus in black pepper is known as .....

(b) Define the following (attempt any **five**) (1×5=5)

(i) Chalazogamy

(ii) Entomophily

(iii) Hypostase

(iv) Obturator

(v) Lithocyst

(vi) Rhytidome

(vii) Fascicular cambium

(c) Match the following (attempt any **five**) (1×5=5)

(i) Composite endosperm	a) Absence of endosperm
(ii) Quiescent centre	b) Loranthceae
(iii) Pollination by water	c) Root
(iv) Sunken stomata	d) *Zea mays*
(v) Bulliform cells	e) Korper-kappe theory
(vi) Schuepp	f) Hydrophily
(vii) Podostemaceae	g) Xerophyte

2. Write short notes on any **five** of the following : (3×5=15)

(i) Microgametogenesis

(ii) Double Fertilisation

(iii) Apomixis

(iv) Metcalfe and Chalk's classification of stomata

(v) Types of Tapetum

(vi) Sclerenchyma

3. Differentiate between any **three** of the following : (3×5=15)

(i) Nuclear and Cellular endosperm

(ii) Monosporic and Tetrasporic embryo sac

(iii) Sapwood and Heartwood

(iv) Monocot and Dicot Stem

4. Draw well labelled diagrams of any **three** of the following : (5×3=15)

P.T.O.

(i) T.S. tetrasporangiate anther at tetrad stage

(ii) L.S. monocot embryo

(iii) T.S. monocot leaf

(iv) V.S. *Nerium* leaf

(v) L.S. anatropus, bitegmic ovule showing *Polygonum* type of embryo sac

5. (a) Discuss the adaptive features of plants pollinated by wind and water with suitable example. (7.5)

(b) Describe anatomical adaptations of hydrophytes with suitable examples. (7.5)

6. (a) Describe secondary growth in dicot roots with the help of suitable diagrams. (7.5)

(b) Define polyembryony and give its classification. (7.5)

7. (a) Describe various types of ovules in angiosperms with help of suitable examples. (7)

(b) Discuss various theories explaining the organisation of root apex. (3)

(c) Write a brief essay on the structure and functions of treachery elements. (5)