

[This question paper contains 4 printed pages.]

Your Roll No. G

Sr. No. of Question Paper : 1762

Unique Paper Code : 2162522301

Name of the Paper : Plant Cell and Developmental
Biology

Name of the Course : B.Sc. Life Sciences

Semester : III

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question No. 1 is compulsory.
3. Attempt any **four** questions in all.
4. Attempt **all** parts of the question together.
5. Draw diagrams wherever required.

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

(i) The Körper-Kappe theory of root apex organization was proposed by _____.

(ii) Living mechanical tissue of a dicot plant
_____.

P.T.O.

(iii) Mesophyll is undifferentiated into palisade and spongy parenchyma in _____ leaf.

(iv) The ovule which has the micropyle and chalaza at the opposite ends is _____.

(v) Perisperm is different from endosperm because _____.

(vi) Intine of pollen grains is composed of _____ and _____.

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

(i) Meristematic tissue

(ii) Cork cambium

(iii) Megasporogenesis

(iv) Mesogamy

(v) Sclereids

(vi) Pollination

(c) State whether the following statements are True or False. (1×5=5)

(i) In leaves, the vascular bundles are collateral and closed.

(ii) Presence of lignin in cell wall is a characteristic feature of Parenchyma.

(iii) Cork is made up of suberin.

(iv) Tapetum is the outermost layer of anther wall.

(v) Chalaza is the basal part of the ovule.

2. Differentiate between the following (any three)
(5×3=15)

(i) Monocot and Dicot leaf.

(ii) Collenchyma and Sclerenchyma

(iii) Atropous and Amphitropous ovules

(iv) Amoeboid and secretory tapetum

(v) Bisporic and tetrasporic embryo sac

3. Write short notes on any three of the following :-
(5×3=15)

(i) Endoplasmic Reticulum

(ii) Ovule

(iii) Waiting meristem theory

(iv) Significance of double fertilization

(v) Functions of tapetum

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4. Draw a well-labelled diagram of any three of the following :-
(5×3=15)

- (i) Plant cell
- (ii) Nucleus
- (iii) Circinotropous ovule
- (iv) T. S. Mature Anther
- (v) T.S. monocot root

5. Attempt the following (any two) :

- (a) Describe the anomalous secondary growth in *Bignonia stem* (7.5)
- (b) Explain the detailed structure of endosperm and its function (7.5)
- (c) Explain the detailed structure and function of cell wall (7.5)