

This question paper contains 3 printed pages]

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S. No. of Question Paper : 1261

Unique Paper Code : LSPT 511 : 216553

E

Name of the Paper : Developmental Biology and Physiology : Plants

Name of the Course : B.Sc. (Life Sciences)

Semester : V

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

This paper contains six questions. Attempt any *five* questions in all.

All questions carry equal marks. Attempt *all*

parts of a question together.

Draw well labelled diagrams wherever necessary.

1. (a) Define (any *five*) :

5×1=5

(i) Double fertilization

(ii) Exine

(iii) Heterostyly

(iv) Chalazogamy

(v) Pollenkitt

(vi) Geitonogamy

(vii) Embryogenesis

P.T.O.

(b) Explain the significance of callose in both microsporogenesis and megasporogenesis.

Or

Briefly outline the life cycle of an angiosperm. 5

(c) What is self-incompatibility? Enumerate the differences between sporophytic and gametophytic self-incompatibility. 5

2. (a) Comment briefly on the roles of endothecium and the anther tapetum. 5

(b) Write notes on the floral adaptations in plants pollinated by wind and by birds. 5

(c) Differentiate between (any two): $2 \times 2.5 = 5$

(i) Synergid and Egg cell

(ii) Amoeboid and Secretory tapetum

(iii) Orthotropous and Anatropous ovule.

3. Write short notes (any three): $3 \times 5 = 15$

(i) Cohesion tension theory for ascent of sap

(ii) Role of ABA in stomatal movement

(iii) Munch hypothesis

(iv) Blackmann's law of limiting factor

(v) Vernalization

4. Differentiate between (any five) : 5×3=15
- (i) Osmotic potential and Water potential
 - (ii) Photosystem I and Photosystem II
 - (iii) Sand culture and Solution Culture
 - (iv) Pr and Pfr
 - (v) Active and Passive Absorption
 - (vi) Fluorescence and Phosphorescence
5. (a) Distinguish between C_3 and C_4 plants with reference to leaf anatomy, biochemical reactions and efficiency. 10
- (b) Discuss the physiological roles of polyamines in plants. 5
6. (a) How does wind influence the rate of transpiration ? 3
- (b) Give an account of physiological roles of auxins or gibberellins. 6
- (c) Explain how simple diffusion is different from facilitated diffusion. 6