

This question paper contains 3 printed pages]

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

S. No. of Question Paper : 95

Unique Paper Code : 216553

G

Name of the Paper : Developmental Biology and Physiology-Plant (LSPT-511)

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

Semester : V

Duration : 3 Hours

Maximum Marks : 75

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

Attempt *Five* questions in all.

Question No. 1 is compulsory.

All questions carry equal marks.

1. (a) Define (any five) : 5

Protandry, triple fusion, vernalization, water potential, symplast, transpiration.

(b) Match the following : 5

Plant embryology P. Maheshwari

Mitchell Cell division

Cytokinin Cohesion theory

H. Dixon Stephen Hales

Plant physiology Chemiosmotic Theory

(c) True and False : 5

(i) Polination by bat is known as Anemophily.

(ii) Seven celled and eight nucleate stage in embryo sac is known as Monosporic.

P.T.O.

- (iii) G_{19} is the active form of Gibberellin.
 - (iv) Auxins are non-polar in their movement.
 - (v) The water potential of pure water is zero.
2. (a) Write down the functions of Tapetum. 5
- (b) Draw well-labelled structure of most common ovule type among angiosperms and write the functions of various parts. 5
- (c) Write a short note on pollen wall. 5
3. Differentiate (any *five*) with diagram : 15
- (i) Amoeboid and secretory tapetum
 - (ii) Vegetative and generative cell
 - (iii) Hypostase and epistase
 - (iv) Egg cell and synergid
 - (v) Endothecium and endothelium
 - (vi) Porogamy and chalazogamy.
4. Write short notes on (any *three*) : 15
- (i) Biological clock
 - (ii) Cohesion and adhesion theory
 - (iii) Source and sink theory
 - (iv) C_4 cycle
 - (v) Mechanism of stomatal opening and closing.
5. Differentiate between (any *three*) : 15
- (i) Cyclic and non-cyclic photophosphorylation
 - (ii) Action and absorption spectrum

- (iii) Hydroponics and aeroponics
 - (iv) Phosphorescence of fluorescence
 - (v) Long day and short day plants.
6. (a) Discuss about the Phytochrome mediated plant responses. 5
- (b) Briefly describe the experiment that led to the discovery of photoperiodism. 5
- (c) Commercial applications of Auxins. 5
7. (a) Discuss the physiological roles of cytokinins in plants. 5
- (b) Describe the deficiency symptoms of any *two* macronutrients. 5
- (c) Discuss about Photorespiration. 5