

E 6137



Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, SEPTEMBER 2024

Sixth Semester

Core Course—PLANT PHYSIOLOGY AND BIOCHEMISTRY

[Common for B.Sc. Botany Model I, Model II and B.Sc. Botany and Bio Technology
(Double Core)]

[Prior to 2013 Admissions]

Time : Three Hours

Maximum Weight : 25

Part A (Objective Type)

Answer all questions.

Weight 1 each for a bunch of four questions.

- I. 1 During osmotic absorption of water soil water first enters into the root hairs by :
- (a) Osmosis. (b) Plasmolysis.
(c) Imbibitions. (d) Diffusion.
- 2 The end product of glycolysis is :
- (a) Citric acid. (b) Pyruvic acid.
(c) Oxalo acetic acid. (d) Acetyl Co-A.
- 3 Avena Curvature test was first demonstrated by :
- (a) Thimann. (b) F. W. Went.
(c) Darwin. (d) Paal.
- 4 Photochemical reaction has temperature Co-efficient.
- (a) One. (b) Two.
(c) Three. (d) Ten.





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II. 5 Cytochrome is associated with :

- (a) Ca. (b) Fe.
(c) Mn. (d) Zn.

6 Which type of water is absorbed by root hairs.

- (a) Capillary. (b) Hygroscopic.
(c) Gravitational. (d) Combined.

7 Which of the following is not a hexose ?

- (a) Xylose. (b) Glucose.
(c) Fructose. (d) Mannose.

8 Who proposed pressure flow hypothesis ?

- (a) Blackman. (b) Münch.
(c) Arrhenius. (d) Beevers.

III. Fill in the blanks :

9 Reaction centre of Pigment System II is _____.

10 Cold Stimulus is perceived by _____ in plants.

11 When a cell is placed in hypotonic solution the cell becomes _____.

12 _____ is a macronutrient that causes inhibition of protein synthesis.

IV. State True or False :

13 Water potential is expressed in Atmospheres.

14 Stomata remain open during night.

15 Oxygen released during photosynthesis comes from H₂O.

16 Allosteric inhibition of enzyme is reversible.

(4 × 1 = 4)





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Part B (Short Answer Questions)

*Answer any **five** of the following.*

Weight 1 each.

- 17 What is RQ ?
- 18 Define pH ?
- 19 What is incipient plasmolysis ?
- 20 What are co-enzymes ?
- 21 What are phytochromes ?
- 22 Mention the difference between long day plants and short day plants.
- 23 What is absorption spectra ?
- 24 What are the common pigments of blue green algae.

(5 × 1 = 5)

Part C (Short Essay/Problem Solving Type)

*Answer any **four** of the following.*

Weight 2 each.

- 25 Leaves which wilt in the afternoon usually recover at night. Why ?
- 26 Differentiate between C₃ and C₄ plants.
- 27 Describe Red Drop and Emerson's enhancement effect.
- 28 Give evidence to prove that solutes are translocated through phloem.
- 29 Explain the mechanism of enzyme action.
- 30 Give a brief account of the practical applications of auxins.

(4 × 2 = 8)





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Part D (Essay Type)

*Answer any **two** of the following.*

Weight 4 each.

- 31 Explain Carbon assimilation pathway.
- 32 Describe the mechanism of transpiration in plants.
- 33 Explain the responses of plants to biotic and biotic stresses.

(2 × 4 = 8)

