

(6 Pages)

Reg. No. :

Code No. : 6898

Sub. Code : PBOM 41

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Fourth Semester

Botany — Core

PLANT PHYSIOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Cytochrome bp of receives electrons from?

(a) ps III

(b) ps I

(c) ps II

(d) none of the above

2. The resistance to CO₂ diffusion of the liquid phase the liquid phase resistance also called as?
- (a) spongy resistance
 - (b) mesophyll resistance
 - (c) cortex resistance
 - (d) endodermis resistance
3. The regulation of the diversion of fixed carbon into the various metabolic pathways is termed?
- (a) partitioning (b) allocation
 - (c) autocation (d) all of the above
4. A physiological feature directly linked to the plant mitochondrial genome is a phenomenon known as?
- (a) cytoplasmic male sterility
 - (b) cytoplasmic female sterility
 - (c) programmed cell death
 - (d) selective permeability
5. Triacylglycerols is most seeds are stored in the cytoplasm of either cotyledon on endosperm cells in organelles known as?
- (a) vacuolesb (b) coleotile
 - (c) oleosomes (d) nucleosomes

6. The study of the motion of the fluid particles and the shape changes that the fluids undergo is called?
- (a) movents (b) translocation
(c) kinematics (d) velocity
7. The rapid, localized cell death due to pathogen attack is called as?
- (a) hypersensitive response
(b) hyposensitive response
(c) hecrotic response
(d) osmotic response
8. The change in leaf or leaflet angle is caused by rhythmic turgor changes in the cells of the?
- (a) petiole (b) radicle
(c) leaf lamina (d) pulvinus
9. The sleep movements of leaves referred to as?
- (a) oscillator
(b) circadian rhythms
(c) nyctinasty
(d) none of the above
10. Bacterial phytochromes are light-dependent histidine kinases that function as?
- (a) kinase substate
(b) disphosphate kinase
(c) sensor proteins
(d) regulator proteins

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Briefly explain about transport of ions across a membrane barrier.

Or

- (b) Write notes on synthesis of starch and sucrose.

12. (a) Write notes on lipid metabolism.

Or

- (b) Explain about the emergence of the auxin concept.

13. (a) Explain about cytokinins delay leaf senescence.

Or

- (b) Write notes on environmental stresses auxin promote ethylene biosynthesis.

14. (a) Write short notes on ethylene commercial uses.

Or

- (b) Explain about transport of water and minerals and food from xylem and phloem elements.

15. (a) Briefly explain concepts of photorespiration.

Or

- (b) The action spectra relate light absorption to photosynthetic activity.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write an essay on CO₂ imposes limitations on photosynthesis.

Or

- (b) Give an account on the mechanism of translocation in phloem the pressure flow mode.

17. (a) Explain a detailed account on developmental and physiological effects of ABA response.

Or

- (b) Write an essay on other negative regulators of the ABA response.

18. (a) Give a detailed account on passive and active transport.

Or

- (b) Write a detailed note on the C₄ cycle concentrates CO₂ in bundle sheath cells.

19. (a) Write a detailed note on cytokine biosynthesis and metabolism.

Or

- (b) Give a detailed notes abscission biosynthesis and metabolism.

20. (a) Give a detailed note on osmosis.

Or

- (b) Write an essay on analysis of plant tissues reveals mineral deficiencies.
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