

(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 in most seeds are stored in the cytoplasm of either cotyledon or endosperm cells in organelles known as?
- (a) vacuoles (b) coleoptile
 - (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) necrotic 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 substrate
(b) disphosphate kinase
(c) sensor proteins
(d) regulator proteins

PART B — (5 × 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 × 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.
