

(6 pages)

Reg. No. :

Code No. : 7179

Sub. Code :PBOM 41

M.Sc (CBCS) DEGREE EXAMINATION,
APRIL 2019.

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. The symplast consists of the entire network of cell which parts interconnected by plasmodesmata?
- (a) Nucleus
 - (b) Cytoplasm
 - (c) Vacuole
 - (d) Endoplasmic reticulum

2. The major symptom of managanese deficiency is intervenouschlorosis associated with the development of?
- (a) Reduction in internodel growth
 - (b) Whiptail disease
 - (c) Necrotic spots
 - (d) None of the above
3. The extremely reactive singlet oxygen (1O_2) goes on to react with and highly damage with _____ of the following?
- (a) Proteins
 - (b) Lipids
 - (c) Nucleous
 - (d) Mitochondria
4. The ferredoxin acceptor of PSI is a very strong reductant that can easily reduce molecular oxygen to form?
- (a) Hydrogen peroxide
 - (b) Superoxide
 - (c) Peroxidase
 - (d) Dismutase
5. Embryogenesis also establishes the?
- (a) Primary meristems
 - (b) Apical meristems
 - (c) Nodal region
 - (d) Endosperm

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6. In calvin cycle a reaction catalyzed by the chloroplast enzyme ribulosebisphosphate carboxylase/ oxygenase, referred to as
- (a) Triose phosphate (b) Translectolase
(c) Fructose (d) Rubisco
7. Light —Dependent enzyme activation regulates the Calvin cycle?
- (a) Ferredoxin — thioredoxin
(b) sedoheptulose-1, 7- bisphatase
(c) Thioredoxin
(d) Hydroxypyruvate
8. Which of the following plant parts is the undifferentiated cell population only?
- (a) Floral meristems
(b) Intercalary meristems
(c) Axillary Meristems
(d) Shoot apical meristems
9. The shedding of leaves, flowers and fruits from the living plant is known as
- (a) Dormency (b) Vernalization
(c) Abscission (d) All of the above

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10. The decrease in turgor cause stomatal closure by?
- (a) hydroactive closure
(b) hydropassive closure
(c) Stomatal closure
(d) Hydraulic closure

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write notes on the transpiration ratio measures the relationship between water loss and carbon gain.
- Or
- (b) Describe about water loss is also regulated by the path way resistances.
12. (a) Write notes on mineral deficiencies disrupt plant metabolism and function?
- Or
- (b) Explain about negatively charged soil particles affect the absorption of mineral nutrients.

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13. (a) Write notes on when molecules absorb or emit light, and they change their electronic state?

Or

- (b) Explain about many antenna complexes have a common structural motif.

14. (a) Write notes on the C_4 cycle concentrates CO_2 bundle sheath cells?

Or

- (b) Write notes on biosynthesis of auxin and gibberellins.

15. (a) Write notes on protein kinases and phosphatases participate in ABA action.

Or

- (b) Explain about developmental effects of auxin.

PART C — ($5 \times 8 = 40$ marks)

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

Each answer should not exceed 600 words.

16. (a) Give an account on the mycorrhizal fungi facilitate nutrient intake by roots, ectotrophic mycorrhizal fungi.

Or

- (b) Give an detailed account on photosynthetic pigments.

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17. (a) Give an detailed account glycolysis?

Or

- (b) Write detailed account on the ammonium assimilation.

18. (a) Give an detailed account on the rate of cell elongation.

Or

- (b) Discuss on the role of cytokinesis in pattern formation.

19. (a) Write an essay on cell differentiation?

Or

- (b) Write an essay on biosynthesis and metabolism of auxin.

20. (a) Explain about cellular and molecular modes of ABA action.

Or

- (b) Explain about cyclic and non- cyclic photophosphorylation.

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