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Reg. No. :

Code No. : 20534 E Sub. Code : CMBO 62

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2024.

Sixth Semester

Botany — Core

PLANT PHYSIOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. The entry and exit of any substance within the cell depend on

(a) Exosmosis (b) Permeability
(c) Imbibition (d) Endosmosis

2. Which of the following is the permeable membrane?

(a) Cell wall (b) Cuticle
(c) Tonoplast (d) Cell membrane

3. Transpiration is directly proportional to

(a) absorption (b) conduction
(c) osmosis (d) diffusion

4. Deficiency of which of the following causes the chlorosis

(a) Calcium (b) Magnesium
(c) Sodium (d) Nitrogen

5. Photosynthesis occurs in

(a) Chloroplast
(b) Golgi body
(c) Endoplasmic reticulum
(d) Nucleus

6. Which among the following is a product of aerobic respiration?

(a) Malic acid (b) Pyruvate
(c) Ethylene (d) Lactose

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7. What is a sigmoid growth curve called?
- Exponential growth curve
 - Logistic growth curve
 - Declining growth curve
 - Interacting curve
8. Identify the gaseous plant hormone
- IBA
 - Ethylene
 - Absciscic acid
 - NAA
9. During the germination of seeds, the seed coat ruptures due to
- massive imbibition of water
 - differentiation of cotyledons
 - a sudden increase in cell division
 - massive glycolysis in cotyledons and endosperm
10. Phytochrome is a photosensitive pigment involved in
- Geotropism
 - Phototropism
 - Photoperiodism
 - Photorespiration

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PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Give an account of water potential.

Or

- (b) Explain the phenomenon of guttation.

12. (a) List down the macro elements.

Or

- (b) Highlight the Cohesion theory.

13. (a) Trace the path of Carbon in C4 cycle.

Or

- (b) Bring out the factors affecting the respiration.

14. (a) Illustrate the growth curve.

Or

- (b) Decipher the physiological role of Gibberellins.

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15. (a) Explain the phenomenon of vernalization.

Or

- (b) How will you classify the plants based on their photoperiodic induction?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Examine the mechanism of stomatal transpiration.

Or

- (b) Analyse the factors affecting the absorption of water.

17. (a) Discuss the Munch's mass flow hypothesis.

Or

- (b) Trace the path of ascent of sap.

18. (a) Critically analyse the light reaction.

Or

- (b) Examine the oxidative phosphorylation.

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19. (a) Evaluate the physiological role of Auxins.

Or

- (b) Validate the functions of Cytokinins.

20. (a) Describe the phenomenon of photoperiodism.

Or

- (b) How will you break the seed dormancy?

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