(6 Pages)

Reg. No. : .....

Code No. : 20372 E **Sub. Code : AMBO 62**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Botany — Core

PLANT PHYSIOLOGY

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The movement of water from its higher concentration to lower concentration through a membrane is called
   (a) Osmosis
   (b) Diffusion
   (c) Imbibition
   (d) Absorption

2. Balsam plant experiment is associated with
   (a) Water absorption
   (b) Translocation of organic solute
   (c) Ascent of sap
   (d) Transpiration

3. Which one of the following helps to cool the leaf surface?
   (a) Guttation
   (b) Transpiration
   (c) Respiration
   (d) Photosynthesis

4. Tissue helping translocation of organic solutes
   (a) Xylem
   (b) Phloem
   (c) Cambium
   (d) All of these

5. Which one of the following is related to ion absorption?
   (a) Pulsating theory
   (b) Cohesion-tension theory
   (c) Capillary force theory
   (d) Protein-lecithin theory

6. Kreb's cycle occurs in

(a) Chloroplast (b) Golgi apparatus

(c) Nucleus (d) Mitochondrion

7. Bundle sheath and mesophyll chloroplasts are seen in

(a) C_4 plants (b) C_3 plants

(c) Pteridophytes (d) Cactai

8. The reaction center of pigment system I is

(a) P680 (b) P690

(c) P700 (d) P600

9. Identify the growth hormone responsible for apical dominance

(a) Auxin

(b) Gibberellin

(c) Cytokinin

(d) Ethylene

10. Process of rupturing hard seed coat is called

(a) Stratification

(b) Scarification

(c) Drying

(d) None of the above

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 Osmosis.

Or

(b) How are different factors affect absorption of water in plants?

12. (a) Explain about the mechanism of opening and closing of stomata.

Or

(b) List out various experimental proofs support phloem is associated with transport of organic.

13. (a) Write short notes on Donnan equilibrium.

Or

(b) Explain the reactions of glycolysis.

14. (a) Describe cyclic electron transport.

Or

(b) Elucidate C4 pathway.

15. (a) Draw 'Sigmoid curve' and explain its phases.

Or

(b) Give a detailed account on the physiological effects of auxins.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Discuss in detail the mechanism of absorption of water.

Or

(b) Explain in detail about mechanism of ascent of sap.

17. (a) Discuss the theories explaining stomatal movement.

Or

(b) Write an essay on translocation of organic solutes.

18. (a) With the help of different theories, explain the mechanism of mineral absorption.

Or

(b) Explain the various reactions of citric acid cycle.

19. (a) Give a detailed account on non-cyclic electron transport.

Or

(b) Write an essay on C_3 cycle.

20. (a) Explain physiological roles of gibberellin.

Or

(b) Give a detailed account on seed dormancy.

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