(6 Pages)

Reg. No. : .....

Code No. : 20203 E **Sub. Code : SMBO 61**

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

Sixth Semester

Botany — Core

PLANT PHYSIOLOGY

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Cohesion - tension theory is related to

(a) Ascent of sap (b) Respiration

(c) Photosynthesis (d) Transpiration

2. The term matric potential is associated with

(a) Osmosis (b) Diffusion

(c) Imbibition (d) Ascent of sap

3. Balsam plant experiment is associated with

(a) Ascent of sap

(b) Transpiration

(c) Translocation of organic solutes

(d) Water absorption

4. Which one of the following is a trace element?

(a) K (b) Ca

(c) Mn (d) Mg

5. The number of ATP molecules synthesized due to the complete breakdown of a glucose molecule is

(a) 30 (b) 37

(c) 38 (d) 40

6. Reaction center of photosystem II is

(a) P700 (b) P680

(c) P670 (d) P660

7. Which one of the following is a gaseous plant hormone?

(a) Gibberellin (b) Cytokinin

(c) Auxin (d) Ethylene

8. The instrument used to measure growth is

(a) Respiro meter (b) Auxano meter

(c) Photo meter (d) Dialato meter

9. Breaking seed dormancy by low temperature treatment in called

(a) impaction

(b) scarification

(c) stratification

(d) none of these

10. Give an example for biotic stress

(a) Fungi (b) Weeds

(c) Bacteria (d) All 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) Give an account on the factors that affect absorption of water by plants.

Or

(b) Give a brief account on diffusion.

12. (a) Discuss any two theories on Ascent of sap.

Or

(b) Write short notes on micronutrients.

13. (a) Bring out the differences between C3 and C4 plants.

Or

(b) Write short notes on glycolysis.

14. (a) Draw a growth curve and explain its various phases.

Or

(b) Explain the physiological role of gibberellins.

15. (a) Write about the methods of breaking seed dormancy.

Or

(b) Write an account on response of plants to drought.

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 about the mechanism of absorption of water.

Or

(b) Give a detailed account on mechanism of stomatal transpiration.

17. (a) List out the physiological roles and deficiency symptoms of NPK.

Or

(b) Describe the mechanism of translocation of organic solutes.

18. (a) Explain Calvin cycle.

Or

(b) Describe Krebs cycle.

19. (a) Write an essay on photoperiodism.

Or

(b) Give an account on vernalization.

20. (a) Write the factors that cause seed dormancy.

Or

(b) Write an account on response of plants to heat and salt.

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