(6 pages) **Reg. No.** :

## Code No. : 30835 E Sub. Code : SMBO 61

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Sixth Semester

Botany — Main

## PLANT PHYSIOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A —  $(10 \times 1 = 10 \text{ marks})$ 

Answer ALL questions.

Choose the correct answer.

- 1. In rainy season wooden doors are hard to close because of
  - (a) Osmosis (b) Diffusion
  - (c) Imbibition (d) Absorption

- 2. Starch-Sugar hypothesis is related to
  - (a) Lenticular transpiration
  - (b) Cuticular transpiration
  - (c) Stomatal transpiration
  - (d) Guttation
- 3. Cohesion-tension theory is related to
  - (a) Respiration (b) Photosynthesis
  - (c) Transpiration (d) Ascent of sap
- 4. The element which is present in the chlorophyll molecule is
  - (a) Magnesium (b) Manganese
  - (c) Iron (d) Sodium
- 5. P680 and P700 involved in
  - (a) Cyclic photophosphorylation
  - (b) Non-cyclic photophosphorylation
  - (c) Dark Reaction
  - (d) Oxidative phosphorylation

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- 6. It happens both in anaerobic and aerobic respiration
  - (a) Glycolysis
  - (b) Electron transport system
  - (c) Krebs cycle
  - (d) Hatch and slack cycle
- 7. Gaseous hormone is
  - (a) Auxin (b) Gibberellin
  - (c) Ethylene (d) Cytokinin

## 8. The term vernalization was introduced by

- (a) Lysenko (b) Kasprov
- (c) Vavilov (d) Karpachenko
- 9. In Photoblastic seeds, the seed germination is induced by
  - (a) Temperature (b) Carbon dioxide
  - (c) Water (d) Light

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- 10. Give an example for biotic stress in plants
  - (a) Fungi (b) Drought
  - (c) Salt (d) Heat

PART B —  $(5 \times 5 = 25 \text{ marks})$ 

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

Each answer should not exceed 250 words.

11. (a) What is transpiration? How can you classify transpiration?

Or

- (b) Give a brief account on diffusion.
- 12. (a) Describe the role of nitrogen and magnesium in plants.

 $\mathbf{Or}$ 

- (b) Explain Munch's mass flow hypothesis.
- 13. (a) Bring out the difference between  $C_3$  and  $C_4$  plants.

Or

(b) Briefly describe the  $C_4$  cycle.

Page 4 Code No. : 30835 E [P.T.O.] 14. (a) Explain the role of cytokinins in plant growth.

 $\mathbf{Or}$ 

- (b) Give the physiological roles of Ethylene.
- 15. (a) Describe the factors that cause seed dormancy.

Or

(b) How can you classify stress?

PART C —  $(5 \times 8 = 40 \text{ marks})$ 

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

Each answer should not exceed 600 words.

16. (a) Describe the active and passive mechanisms of absorption of water by plants.

Or

(b) Explain the factors affecting transpiration and mention its importance.

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17. (a) Write the role and deficiency symptoms of any five micronutrients.

Or

- (b) Describe in detail about the mechanism of ascent of sap.
- 18. (a) Describe Calvin Cycle.

Or

- (b) Give a detailed account on Glycolysis.
- 19. (a) Write an essay on photoperiodism.

Or

- (b) Write an essay on vernalization.
- 20. (a) What is seed dormancy? Add a note on the methods of breaking seed dormancy.

Or

(b) Write a essay on salt stress.

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