(6 pages)

Reg. No. :

Code No. : 10835 E Sub. Code : SMBO 61

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2020.

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. During guttation water is lost through

- (a) Lenticel (b) Hydathode
- (c) Vein (d) Stomata

- 2. Which is the ion believed to be responsible for the movement of stomata?
 - (a) Mg^+ (b) Cl^-
 - (c) Ca^+ (d) K^+
- 3. Cohesion tension theory is related to
 - (a) Transpiration (b) Respiration
 - (c) Photosynthesis (d) Ascent of sap
- 4. Chlorosis is
 - (a) Yellowing of leaves
 - (b) Falling of leaves
 - (c) Maturation of leaves
 - (d) Etiolation of stem
- 5. The number of ATP molecules synthesized due to the breakdown of a glucose molecule is
 - (a) 40 (b) 38
 - (c) 30 (d) 37
- 6. Kreb's cycle occurs in
 - (a) cytoplasm (b) Mitochondria
 - (c) Chloroplast (d) Cellwall
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7. Which of the following is an auxi	n?
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- (a) Malic acid
- (b) Pyruvic acid
- (c) Indole-3-acetic acid
- (d) Abscisic acid

8. Induction of flowering by low temperature is

- (a) Photoperiodism (b) Phototropism
- (c) Vernalization (d) Dormancy
- 9. Photoblastic seeds require ——— for germination.
 - (a) Blue light (b) Red light
 - (c) Violet light (d) No light

10. Give an example for biotic stress in plants.

- (a) Bacteria (b) Salt
- (c) Drought (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) Write notes on Osmosis.

Or

(b) Describe guttation.

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12. (a) Give an account of the mechanism of absorption of mineral salts by plants.

Or

- (b) Write about the deficiency symptoms of Iron and Zinc.
- 13. (a) Write notes on cyclic electron transport and cyclic photophosphorylation.

Or

- (b) Give a brief account on Glycolysis.
- 14. (a) Explain the physiological role of Gibberellins.

 \mathbf{Or}

- (b) Describe classification of plants according to photoperiodism.
- 15. (a) Write about the methods of breaking seed dormancy.

Or

(b) Write short notes on biotic stress.

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

Each answer should not exceed 600 words.

16. (a) Give a detailed account on mechanism of absorption of water.

Or

- (b) Describe various theories, which explain the mechanism of opening and closing of stomata.
- 17. (a) Describe the mechanism of translocation of organic solutes in plants.

Or

- (b) Describe in detail about the mechanism of ascent of sap.
- 18. (a) Describe C_3 cycle.

Or

- (b) Describe Kreb's cycle.
- 19. (a) Write about the role of phytochromes in photoperiodism.

Or

(b) Write an essay on vernalization.

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

 \mathbf{Or}

(b) Give a detailed account on response of plants to salt and heat.

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