C 60078 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2019

(CUCBCSS)

Botany

BOT 6B 10—PLANT PHYSIOLOGY AND METABOLISM

Time : Three Hours Maximum : 80 Marks

Section A

Answer **all** *questions.*

Each question carries 1 *mark.*

1. What is imbibition ?
2. What is meant by water potential ?
3. Comment on adhesive property of water.
4. Name the enzyme catalysing carboxylation in C_3 plants.
5. Name the assimilatory powers produced in light phase of photosynthesis.
6. Name the tissue concerned with sugar transport.
7. Name a natural auxin.
8. What is vernalisation ?
9. Who proposed chemiosmotic theory ?
10. Which is the site of EMP pathway ?

(10 × 1 = 10 marks)

Section B

Answer **all** *questions.*

Each question carries 2 *marks.*

11. Comment on the property of water as a solvent.
12. Distinguish diffusion and osmosis.
13. What are antitranpirants ? Give two examples.
14. Explain Emerson's enhancement effect.
15. Distinguish fluorescence and phosphorescence.
16. What is meant by reductive amination ?

Turn over

17. Comment on phloem loading.
18. Explain the role of auxin in apical dominance.
19. Why citric acid cycle is said to be an amphibolic pathway ?
20. What is β oxidation of fatty acid ?

(10 × 2 = 20 marks)

Section C

Answer any **six** *questions.*
Each question carries 5 *marks.*

21. Discuss the forces like transpiration pull and codesive forces of water molecules in ascent of sap in plants.
22. What is meant by active salt absorption ? Explain the mechanism.
23. Explain Blackman's law of limiting factors.
24. Describe the biochemistry of nitrogen fixation.
25. Explain pressure flow hypothesis.
26. Write notes on seismonastic movements.
27. Explain non-cyclic photophosphorylation.
28. Describe glyoxylate cycle.

(6 × 5 = 30 marks)

Section D

Answer any **two** *questions.*
Each question carries 10 *marks.*

29. Discuss the K^+ and H^+ mechanism in opening and closing of stomata.
30. Describe Hatch and Slack pathway of CO_2 fixation and its significance.
31. Describe the fate of pyruvic acid under aerobic conditions.

(2 × 10 = 20 marks)