18/12/24 A.M

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Reg. No. : .....

Name : .....

Fifth Semester B.Sc. Degree Examination, December 2024

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

Core Course

BB 1541 : PLANT PHYSIOLOGY

(2019 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in **one** word or sentence.

1. What is osmosis?
2. Define imbibition.
3. Name any two essential element and state its role.
4. What is the source of oxygen in photosynthesis?
5. Mention the role of accessory pigments in photosynthesis.
6. What is respiratory quotient?
7. What is nitrification?
8. Name one growth hormone.
9. Define senescence.
10. What is nyctinastic movement?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions, Short Answer (Not to Exceed One Paragraph)

11. Explain turgor pressure?.
12. What is active transport mechanism in plants?
13. Differentiate between aerobic and anaerobic respiration.
14. Detail the cohesion tension theory of ascent of sap.
15. What are the factors affecting transpiration?
16. Differentiate between active and passive absorption.
17. What is hydroponics? What are its advantages?
18. What are quantasomes?
19. What is the role of cytochrome C in respiration?
20. Explain the signifiance of crop rotation.
21. Comment on apoplast pathway.
22. What are short day plants?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks. (Answer not to exceed **120** words)

23. What is vernalin? What is its role?
24. Explain how plants cope up with saline stress.
25. Identify methods to break down seed dormancey?
26. What are the phases of plant growth from seeds?

27. Explain mass flow hypothesis.

28. Comment on ammonification.

29. Elaborate on Oxidative Pentose Phosphate Pathway.

30. Explain the concepts, Water Potential and Solute Potential.

31. Brief a short note on vital theories of ascent of sap.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks. (Answer not to exceed **three** pages)

32. With suitable diagrams, explain the light reaction of Photosynthesis.

33. Elaborate Krebs cycle. Why is it called as an anabolic pathway?

34. Detail the mechanisms of nutrient abosorption in plants.

35. Explain various mechanisms of water loss from plants with suitable sketches.

(2 × 15 = 30,Marks)
