



Reg. No. : .....

Name : .....



K19U 2215

V Semester B.Sc. Degree (CBCSS- Reg./Sup./Imp.) Examination,

November-2019

(2014 Admn. Onwards)

CORE COURSE IN BOTANY/PLANT SCIENCE

5B 08 BOT/PLS:PLANT - PHYSIOLOGY AND BIOCHEMISTRY

Time : 3 hrs

Max. Marks : 40

*Instruction : Draw diagrams wherever necessary.*

### SECTION - A

Answer **all** the questions. Each question carries **one** mark. Choose the correct answer. (4×1=4)

1. A co factor  
a) ATP    b) NAD    c) Mg<sup>2+</sup>    d) Cytochrome
2. Fruit ripening hormone  
a) Auxin    b) Kinins    c) Ethylene    d) ABA
3. Which of the following is required for the synthesis of chlorophyll  
a) Calcium    b) Aluminium    c) Sulphur    d) Iron
4. Water potential of pure water is  
a) More than zero .  
b) Zero.  
c) Less than zero.  
d) None of these.

### SECTION - B

Answer any **eight** of the following. Each question carries **two** marks. (8×2=16)

5. Explain Red Drop and Emerson's enhancement effect.
6. What is gravitropism?
7. Differentiate between zymase and zymogen.

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8. Explain phloem loading and unloading.
9. Give an account on classification of enzymes.
10. Write on the properties of amino acids. What are zwitterions?
11. Discuss the role of potassium ions on the movement of stomata.
12. Differentiate between action and absorption spectrum.
13. Give the role of any two macroelements.
14. What is photorespiration?
15. Explain the physiological effects of ABA.
16. Write notes on nastic movements.

### SECTION - C

Answer any **four** of the following. Each question carries **three** marks ( $4 \times 3 = 12$ )

17. Explain chemiosmotic theory as it pertains to oxidative phosphorylation.
18. With the help of suitable diagrams, explain ion uptake by plants exchange mechanism.
19. Explain the physiological role of auxins in plants.
20. Write an account on the classification of carbohydrates with suitable examples.
21. Describe with the help of a schematic representation the steps involved in Krebs's cycle.
22. Describe the mechanism by which water reaches the top of very tall trees.

### SECTION - D

Answer any **one** question. Each question carries **eight** marks. ( $1 \times 8 = 8$ )

23. Give an account on how proteins are classified.
  24. Enumerate the factors that influence enzyme action and illustrate the various ways in which it is inhibited.
  25. Describe the Calvin cycle of carbon assimilation in photosynthesis. How does it differ from the C<sub>4</sub> pathway?
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