Reg. No…….. Name…… **20U244-S**

B. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2020

SEMESTER **– 2: BOTANY (COMPLEMENTARY FOR ZOOLOGY)**

COURSE: **15U2CPBOT2, PLANT PHYSIOLOGY**

(For Improvement / Supplementary 2018/2017/2016/2015 admissions)

Time: Three Hours Max. Marks: 60

PART A

I. *Answer **ALL** questions; each question carries **1** mark.*

1. What would be expected to happen if GA3 is applied to rice seedlings
2. Define meristem
3. What is imbibition?
4. What is Kleinostat?
5. What are antitranspirants
6. What is Emerson's enhancement effect
7. What is photo respiration?
8. What is Sigmoid growth curve (1 x 8 = 8)

PART B

II. *Answer **ANY SIX** questions; each question carries **2** marks.*

9. Differentiate between Diffusion and Osmosis
10. Give comparison between C3 and C4 pathways
11. Differentiate between Transpiration and Evaporation
12. Explain what will happen to a plant cell if it is kept in a solution having higher water potential.
13. Give comparison between Cyclic and non-cyclic photophosphorylation
14. What are antitranspirants. Give two examples.
15. Discuss the factors responsible for ascent of xylem sap in plants.
16. What essential role does the root endodermis play during mineral absorption in plants?
17. Explain why xylem transport is unidirectional and phloem transport bi-directional.
18. Explain Red drop effect. (2 x 6 = 12)

PART C

III. *Answer **ANY FOUR** questions; each question carries **4** marks.*

19. What are porins? What role do they play in diffusion?
20. Describe the role played by protein pumps during active transport in plants.

21. Even though a very few cells in a C4 plant carry out the biosynthetic – Calvin pathway, yet they are highly productive. Can you discuss why?
22. Explain Munch mass flow of hypothesis in plants.
23. Explain the different methods to break seed dormancy.
24. List five main groups of natural plant growth regulators. Write a note on discovery, physiological functions and agricultural/horticultural applications of any one of them.

(4 x 4 = 16)

PART D

IV. *Answer **ANY TWO** questions; each question carries **12** marks.*

25. With the help of schematic diagram, describe the mechanism of C_3 cycle plants.

OR

26. Describe transpiration pull model of water transport in plants. What are the factors influencing transpiration? How is it useful to plants?
27. What do you understand by photoperiodism and vernalisation? Describe their significance.

OR

28. Describe the process of nitrogen fixation in plants.

(12 x 2 = 24)

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