Reg. No ..... Name **18P3634**

MSc DEGREE END SEMESTER EXAMINATION - OCTOBER 2018

SEMESTER 3 : BOTANY

COURSE : **16P3BOTT11 : PLANT PHYSIOLOGY & METABOLISM**

(For Regular - 2017 Admission & Supplementary - 2016 Admission)

Time : Three Hours Max. Marks: 75

Section A

Answer any 8 (2 marks each)

1. Write an account on Emerson's Red Drop Effect.
2. List three primary photosynthetic pigments and describe the role of each in photosynthesis.
3. Explain the role of turgor pressure in phloem unloading.
4. Which will die first, the root or the shoot in a ringed plant? Explain.
5. What do you mean by triple response? Which hormone is associated with it?
6. What is meant by substrate level phosphorylation? Explain.
7. State the significance of Krebs cycle.
8. Explain the structure of stomata and stomatal resistance.
9. What do you mean by gated channels? Explain its significance.
10. What are ionophores?
11. Explain bacteroids.
12. Briefly describe the heat shock proteins (HSPs) and its significance. **(2 x 8 = 16)**

Section B

Answer any 7 (5 marks each)

13. Explain the CO_2 concentrating mechanism in CAM plants.
14. Explain the structure of any two photosynthetic pigments.
15. Write an account on the physiological actions of ABA.
16. Explain the various complexes involved in mitochondrial electron transport system.
17. Write a critical account on physiology of flowering.
18. What is meant by transpiration ratio? What does it indicate?
19. Describe the volumetric elastic modulus and its relationship between hydrostatic pressure potential and cell volume.
20. Describe the classification of mineral nutrients based on biological function.
21. Describe nodule formation in legumes.
22. Give an account on biotic stress factors in plants.

(5 x 7 = 35)

Section C

Answer any 2 (12 marks each)

23. What is auxin? Give an account on its biosynthetic pathway along with its functions in plants.
24. Explain the structure of ATP synthase. Give an account of its functioning.
25. Give an account on water movement from the leaf to the atmosphere with special mention of pathway resistances.
26. Write an essay on active transport of ions, solutes and macromolecules in plants.

(12 x 2 = 24)