16U430 (Pages: 2) Name: …….……

Reg. No……

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2019

(Regular/Supplementary/Improvement)

(CUCBCSS-UG)

CC15U BOT4 C04 - PLANT PHYSIOLOGY, ECOLOGY AND GENETICS

Botany - Complementary Course

(2015 Admission onwards)

Time: Three Hours Maximum: 64 Marks

Draw diagrams only when specified

Part A

Answer ***all*** questions. Each question carries 1 mark.

1. The structure that favours guttation is ----------
2. The plant hormone known as stress hormone is ----------
3. Monohybrid genotypic ratio is ----------
4. Name the last member in the respiratory chain that donate electrons directly to molecular oxygen is ----------
5. Name the stage at which photolysis of water takes place during photosynthesis.
6. Name the first stable metabolic product in Hatch and Slack pathway.
7. Name the low temperature treatment to increase flowering in plants.
8. Give a typical example of total stem parasite.
9. Give an example for incomplete dominance.
10. Name the cyclic series of aerobic reactions involved in carbohydrate metabolism.

(10 x 1 = 10 Marks)

Part B

Answer any ***seven*** questions. Each question carries 2 marks.

11. Define osmosis.
12. What are antitranspirants?
13. Mention the role of velamen roots.
14. Write short note on kranz anatomy.
15. Briefly describe senescence.
16. Write short note on detritus food chain.
17. What is meant by Emerson's red drop and Emerson's enhancement effect?
18. Discuss the biotic components of an ecosystem.
19. Write a short description on epistasis
20. Briefly describe photoperiodism.

(7 x 2 = 14 Marks)

Part C

Answer any ***six*** questions. Each question carries 4 marks.

21. Describe the mechanisms involved in passive absorption of water.
22. Explain cohesion-tension theory to substantiate ascent of sap.
23. Explain complementary gene action with the help of an example.
24. Explain TCA cycle.
25. Describe Calvin cycle.
26. Describe Law of independent assortment with the support of dihybrid cross.
27. Explain the ecological adaptations in xerophytes.
28. Explain the mechanism of stomatal movement with the help of appropriate theories.

(6 x 4 = 24 Marks)

Part D

Answer any ***two*** questions. Each question carries 8 marks.

29. Discuss the mechanism and significance of Hatch and Slack pathway in photosynthesis.
30. Define plant succession. How does plant succession takes place in water? Describe various stages.
31. Give a brief account of phytohormones with special reference to the occurrence and physiological effects of auxins.

(2 x 8 = 16 Marks)

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