

16U423

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Name:

Reg. No.

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2018

(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

Part A

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

1. Name the pathway in which water moves from cell to cell through plasmodesmata and plasma membrane.
2. Spongy, hygroscopic and photosynthetic hanging aerial roots are called
3. Initial positive acceleration phase of a growth curve is called
4. Name the cell organelle which is devoid of genetic material involved in photorespiration.
5. Which phenomenon is responsible for the lateral bud suppression in plants?
6. is the development of an ovary into a fruit without fertilization.
7. Formation of uninhabited area for the initiation of a succession is called
8. A cross between F₁ hybrid and its recessive parent is called
9. Give the water potential value of pure water.
10. Give an example for herbicidal plant hormone.

(1 x 10 = 10 Marks)

Part B

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

11. Define gene.
12. What is Kranz anatomy?
13. Distinguish between ecesis and aggregation.
14. Write a short note on photoperiodism.
15. Briefly explain photorespiration.
16. Explain major changes of fruit ripening.
17. Write a short note on significance of vernalization.
18. Distinguish the role of Rubisco in photosynthetic gain and loss.
19. Give the commercial uses of synthetic ethylene.
20. Describe photosynthetic unit.

(7 x 2 = 14 Marks)

Part C

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

21. Briefly explain the types of senescence.
22. Explain the factors controlling seed dormancy.
23. Write notes on epistatic gene action.
24. Describe the hydrophytic anatomical modifications of leaf and stem.
25. Explain the structure of $F_0 F_1$ ATP synthetase.
26. Differentiate between oxidative phosphorylation and photophosphorylation.
27. Explain the components of ecosystem.
28. State the theories of stomatal movement in plants.

(6 x 4 = 24 Marks)

Part D

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

29. Describe the Photophosphorylation of ADP.
30. Explain Krebs cycle.
31. Write an essay on ecological adaptations of halophytes and epiphytes.

(2 x 8 = 16 Marks)
