

C 61258

(Pages : 2)

Name.....

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2019
(CUCBCSS—UG)

Botany

ROT 4C 04—PLANT PHYSIOLOGY, ECOLOGY AND GENETICS

Time : Three Hours

Maximum : 64 Marks

Part A (Answer in a word)

Answer all questions.

Each question carries 1 mark.

1. The cell organelle associated with protein synthesis.
2. The diffusion of solvent molecules into a solution through a semipermeable membrane.
3. The enzyme for carboxylation of PEP in CAM plants.
4. The site of glycolysis.
5. Name a synthetic auxin.
6. Low temperature treatment of seedlings for early flowering.
7. A cross in which parents differ with respect to one pair of alleles.
8. Genotypic ratio in incomplete dominance.
9. A rooted submerged hydrophyte.
10. The roots in halophytes providing extra anchorage and support.

(10 × 1 = 10 marks)

Part B (Short Answer Questions)

Answer any seven questions.

Each question carries 2 marks.

11. Write a brief account on diffusion.
12. What are antitranspirants? Give two examples.
13. Comment on action spectrum and absorption spectrum.
14. Write an account on fermentation.

Turn over

15. What are the anatomical peculiarities of C_4 plants?
16. Which are the different phases of growth?
17. List out any four physiological adaptations found in halophytes.
18. Write an account on the morphological adaptations in *Cuscuta*.
19. What is test cross? What is the ratio of a dihybrid test cross?
20. Explain law of segregation.

(7 × 2 = 14 marks)

Part C (Short Essay Questions)

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

21. Explain cohesion tension theory.
22. Write an account on water absorption.
23. Describe non-cyclic photophosphorylation.
24. Explain EMP pathway.
25. Write an account on the factors causing dormancy and the techniques to break dormancy.
26. Comment on the morphological adaptations found in xerophytes.
27. Explain gene interaction with flower colour in *Lathyrus* as an example.
28. Write an account on Mendel's dihybrid experiments.

(6 × 4 = 24 marks)

Part D (Essay Questions)

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

29. Write an essay on the concept of ecosystem and its biotic components.
30. What is transpiration? Discuss its significance in plant life.
31. What is dark reaction in photosynthesis? How does it take place in C_3 plants?

(2 × 8 = 16 marks)