

**FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2022****(Regular/Improvement/Supplementary)****BOTANY: COMPLEMENTARY COURSE FOR ZOOLOGY****GBOT4C04T: PLANT PHYSIOLOGY, ECOLOGY AND GENETICS****Time: 2 Hours****Maximum Marks: 60****SECTION A: Answer the following questions. Each carries *two* marks.****(Ceiling 20 Marks)**

1. What is a test cross? What is its significance?
2. Name the structural and functional components of ecosystem.
3. Define solute potential.
4. What is incomplete dominance? Give example.
5. Write any two examples of respiratory substrates.
6. Name the stress hormone in plant. Why it is named so?
7. Give any two causes of seed dormancy.
8. Differentiate between Autecology and Synecology.
9. What are cristae? Write its significance.
10. Name the carbon dioxide fixing enzymes of C<sub>3</sub> and C<sub>4</sub> pathways.
11. State the principle of segregation.
12. What is photoperiodism?

**SECTION B: Answer the following questions. Each carries *five* marks.****(Ceiling 30 Marks)**

13. Write the mechanism of electron transport system in respiration.
14. Write a note on hydrosere.
15. Explain the physiological effects of Gibberellic Acid.
16. Discuss the theories of ascent of sap.
17. Describe the morphological, physiological and anatomical adaptations of Xerophytes.
18. Explain the mechanism of stomatal movements.
19. Elucidate the mechanism of non-cyclic photophosphorylation.

**SECTION C: Answer any *one* question. Each carries *ten* marks.**

20. Explain nonallelic gene interaction citing complementary genes as an example.
21. Explain C<sub>4</sub> pathway. Add a note on its significance.

**(1 × 10 = 10 Marks)**