D6BBT2201 **Reg. No.....**

Name: .....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2025
(Regular/Improvement/Supplementary)

BOTANY
GBOT6B10T: GENETICS AND PLANT BREEDING

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. What is emasculation?
2. What is gene frequency?
3. Define inheritance. Mention its significance.
4. What is Chiasma?
5. Comment on heterosis vigour.
6. What is Polygenic inheritance?
7. What is linkage? State its significance.
8. Mention any four functions of ICAR.
9. Give a note on the factors affecting chromosome mapping.
10. Differentiate back cross from test cross.
11. List the significance of polyploid breeding.
12. State the interference and coincidence in gene mapping.

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

13. Discuss extra nuclear inheritance with suitable examples.
14. Explain the steps in mutation breeding and its achievements.
15. State the effects of inbreeding depression.
16. Explain the inheritance of fruit color in summer squashes.
17. Write an account on different types of selections mentioning the advantages and disadvantages.
18. Discuss lethal genes with suitable examples.
19. Explain the inheritance of flower colour in *Lathyrus.*

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

20. Explain the objectives of plant breeding.
21. Describe the concept of Epistasis, providing suitable examples for both recessive and dominant epistasis.

(1 × 10 = 10 Marks)