Reg. No ..... Name **25U566**

B. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2025

SEMESTER 5 : BOTANY

COURSE : **19U5CRBOT7 : GENETICS AND PLANT BREEDING**

(For Regular 2023 Admission and Supplementary 2022/ 2021/ 2020 / 2019 Admissions)

Time : Three Hours Max. Marks: 60

PART A

Answer All (1 mark each)

1. Which is the selection method most suitable for self pollinated crops?
2. Migration of individuals occur repeatedly from and towards in a population. Does this population obey Hardy Weinberg rule. Justify your answer.
3. Give an example for dominant epistatic gene interaction.
4. What is quantitative trait? Give example.
5. Define apomixis.
6. What is Linkage map?
7. Define polyploidy. Give an example for polyploid plant.
8. What is Extranuclear inheritance?

(1 x 8 = 8)

PART B

Answer any 6 (2 marks each)

9. Differentiate between recombinant and non-recombinant gametes.
10. What is Multiple Factor Hypothesis?
11. What is chromosomal sex-determination? Give an example.
12. Write the merits of mass selection.
13. What are GM crops? Give an example.
14. What is Recessive epistasis? Give an example.
15. State the Hardy-Weinberg Principle and write the H-W equation.
16. Write the applications of pedigree method.
17. What is maternal effect? Give an example.
18. Differentiate between gene and genotype.

(2 x 6 = 12)

PART C

Answer any 4 (5 marks each)

19. Define inbreeding depression and write its effects.
20. Explain the inheritance of Comb pattern in Poultry.
21. What are the different characters and traits selected for the experimental studies in Pisum sativum by Mendel?
22. Explain the mechanism of Crossing Over.
23. Explain the inheritance pattern of haemophilia in man.
24. Write a note on allotetraploids.

(5 x 4 = 20)

PART D
Answer any 2 (10 marks each)

25. The action of alleles of one gene masked the phenotypic expression of alleles of the other gene. What kind of gene interaction is mentioned above? Explain this interaction with any two examples.
26. Homologous chromosome separate during meiosis and incorporated into different gametes and genetic information passes to offspring. List out patterns of inheritance passed not through chromosome, explain in detail with examples.
27. With the help of diagram explain eye colour in Drosophila.
28. Describe the different methods of hybridization.

(10 x 2 = 20)