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SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2025

(CBCSS)

Botany

BOT2C05—CYTOGENETICS, GENETICS, BIOSTATISTICS, PLANT BREEDING AND EVOLUTION

(2019 Admission onwards)

Time : Three Hours　　　　　　　　　　　　　　　　　　Maximum : 30 Weightage

Part A

Answer any **four** *questions.*

1. Define domestication.

2. Define a hypothesis. Write one method used for test of hypothesis.

3. Explain the term centers of diversity.

4. Explain genetic recombination.

5. What is translocation heterozygotes.

6. What are retrotransposones.

7. Write the application of chi-square test.

$(2 \times 4 = 8$ weigtage)

Part B

Answer any **four** *questions.*

8. Briefly explain polytene and lampbrush chromosome.

9. Explain QTL mapping.

10. Explain genetic recombination and mapping of genes in bacteriaphages.

11. Explain different methods of presentation of data in statistical analysis.

Turn over

12. Write a short account on the various *ex situ* conservation methods.

13. Give a brief account on the chemical and biological evolution.

14. Write short note on the different statistical softwares used in biological studies.

$(4 \times 3 = 12$ weigtage)

Part C

Answer any **two** *questions.*

15. What is hardy-Weinberg equilibrium ? Explain what are the factors affect the equilibrium of a population.

16. Write short essay on the extranuclear inheritance.

17. Write an essay on the role of aneuploidy and euploidy in evolution.

18. Write an account on the plant breeding methods used for special purposes.

$(2 \times 5 = 10$ weigtage)