

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2024
(Regular/Improvement/Supplementary)

BOTANY

FBOT2C05: GENETICS, BIOSTATISTICS, PLANT BREEDING AND EVOLUTION

Time: 3 Hours

Maximum Weightage: 30

Part A: Answer any *four* questions. Each carries 2 weightage.

1. Write a short note on retrotransposons.
2. What is pedigree analysis? Mention its significance.
3. Give an account on Standard error.
4. Write an account on the linkage in humans citing an example.
5. What is MINITAB? Mention its importance in data analysis.
6. Write an account on the applications and limitations of polyploidy breeding.
7. Elaborate on reproductive isolation and its significance.

(4 × 2 = 8 weightage)

Part B: Answer any *four* questions. Each carries 3 weightage.

8. Explain tetrad analysis and comment on its significance.
9. Write an account on heritability and its measurements.
10. Give a detailed account on autopolyploidy breeding. Mention its applications and limitations.
11. What is Poisson distribution? List the characteristics of the Poisson distribution and its application in biological research.
12. Write a note on regression analysis.
13. Explain the procedure of Pureline selection mentioning its merits, demerits and achievements.
14. Give an account on Darwinian and Post-Darwinian theories of evolution.

(4 × 3 = 12 weightage)

Part C: Answer any *two* questions. Each carries 5 weightage.

15. Write an essay on mobile genetic elements found in eukaryotes.
16. Describe the methodology involved in breeding for drought resistance. Make a note on its achievements.
17. Give an account on the theories and experimental evidences for the origin of life.
18. Describe the Chi-square test and its applications in hypothesis testing. How does the Chi-square test differ from the Z-test and t-test?

(2 × 5 = 10 weightage)