

15013

M.Sc. DEGREE EXAMINATION, OCTOBER/NOVEMBER 2015.

FIRST SEMESTER

Botany

Paper III — GENETICS AND CYTOGENETICS

Time : Three hours

Maximum : 75 marks

(No additional sheet will be supplied)

SECTION A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should exceed 1 page.

1. Test cross
2. Genomic imprinting
3. Centromere mapping
4. Lod scores
5. Sex duccion
6. Deletion mapping
7. Inversions
8. Biochemical basis of mutations

SECTION B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. What is complementation test? Explain its significance in genetics.

Or

10. Explain three epistatic gene interactions with suitable examples.

11. Give an account on development of different mapping populations and their advantages in construction of genetic maps in plants

Or

12. Explain the development of somatic cell hybrids and their significance in mapping of human genes.
13. Give an account on genetic fine structure analysis of rII locus.

Or

14. Give an account on components of heritability and their measurement.
15. Explain the basis, detection and significance of insertional mutagenesis.

Or

16. Explain the patterns of gene segregation and genetic implications in polyploids.

