D 140641 **(Pages : 2)** **Name.....**

Reg. No.....

SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2026

(CBCSS)

Botany

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

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

Section A (Short Answer Type Questions)

Answer any **four** *questions.*

1. Define Robertsonian translocation.
2. What are B-chromosomes ?
3. Define cytoplasmic male sterility.
4. What is heritability ?
5. Define correlation co-efficient.
6. Define *ex situ* conservation.
7. What is the geological time scale ?

(4 × 2 = 8 weightage)

Section B (Short Essay Type Questions)

Answer any **four** *questions.*

8. Describe B-A translocation and its cytogenetic importance.
9. Discuss the concepts of segmental allopolyploidy and diploidization.
10. Describe the procedure and significance of a three-point test cross in linkage mapping.
11. Write a note on the Protection of Plant Variety and Farmers' Right Act (PPVFR).

Turn over

12. Discuss the genetic basis of heterosis and inbreeding depression.

13. What is reproductive isolation and its role in the origin of species ?

14. Write on the importance of karyotype analysis in cytogenetics ?

(4 × 3 = 12 weightage)

Section C (Long Essay Type Questions)

Answer any **two** *questions.*

15. Explain the concept and applications of *in situ* hybridization.

16. Describe the types of transposable elements in bacteria and plants.

17. Discuss measures of central tendency and dispersion and their significance.

18. Describe polyploidy breeding and its significance in plant breeding.

(2 × 5 = 10 weightage)