

2025

M.Sc. 3rd Semester Examination

BOTANY

Paper : BOT - 302

(Biotechnology)

(New Syllabus)

Full Marks : 25

Time : Two Hour

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *two* questions : $2 \times 2 = 4$

1. Illustrate Blue/White selection and state its use in transgenesis.
2. Why are multiple cloning sites (MCS) important in vectors?
3. Mention the essential elements required as constituents of a plasmid vector for genetic engineering and their uses.
4. Explain footprint of transposition and its significance.

P.T.O.

(2)

Group - B

Answer any *two* questions : 4×2=8

5. How do multilocus probe and single locus probe help in identification of individual?
6. Illustrate the steps involved in the preparation of a cDNA library.
7. Characterize Cosmid and comment on its utility.
8. Explain transgressive inheritance. Why plant introduction is considered a method of plant breeding? 2+2

Group - C

Answer any *one* question : 8×1=8

9. Contrast Composit and Synthetic varieties. Mention the procedure of developing Pure Line variety and state the genetic basis of purity. 2+6
10. How microplasts are made and for which purpose they are used in cell culture? Mention the procedure for liberating plant protoplast for culture, precautions to be taken and testing the viability of protoplast. 2+6

Internal Assessment : 5 marks
