

2025

M.Sc. 1st Semester Examination

BIOTECHNOLOGY

Paper : BITC402X1

[Cell Biology and Genetics]

Full Marks : 25

Time : One 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. What is ionophore? State its importance.
2. Define *in situ* hybridization.
3. What is pedigree analysis?
4. What is polygenic inheritance?

Group - B

Answer any *two* questions : $4 \times 2 = 8$

5. Write briefly about natural selection and genetic drift.

2+2

P.T.O.

(2)

6. Briefly describe the functions of cytoskeleton.
7. Write short note on chromosomal aberrations.
8. "Facilitated diffusion resembles the properties of enzyme-substrate kinetics." — Explain.

Group - C

Answer any *one* question : 8×1=8

9. Explain the roles of phospholipids and proteins in maintaining the structure and properties of biological membrane. Describe fluid-mosaic model. 3+3+2
10. Discuss epigenetic regulation of gene expression. Describe the significance of Hardy-Weinberg principle in population genetics. 5+3

Internal Assessment : 5 marks
