



K26P 0708

Reg. No. :

Name :

IV Semester M.Sc. Degree (CBCSS – OBE – Regular/Supple./Imp.)
Examination, April 2026
(2023 Admission Onwards)
BOTANY
MSBOT04C15 : Cell and Molecular Biology

Time : 3 Hours

Max. Marks : 60

PART – A

Answer **any five** questions. **Each** question carries **3** marks.

1. How are meiotic defects linked to infertility ?
2. Explain the role of microtubules in chromosome segregation.
3. What are initiation factors in translation ?
4. Define gene rearrangement.
5. What are circRNAs ? What is its significance ?
6. Explain Robertsonian translocation with an example.

(5×3=15)

PART – B

Answer **any three** questions. **Each** question carries **6** marks.

7. Describe chromosome banding techniques and their significance.
8. Explain different types of stem cells.
9. Describe in detail the different pathways of programmed cell death.
10. Explain the role of spliceosomes in mRNA maturation.
11. Discuss the features of transformed cancer cells.

(3×6=18)

P.T.O.

K26P 0708



PART – C

Answer **any three** questions. **Each** question carries **9** marks.

12. Explain DNA damage and repair mechanisms in detail.
13. Describe gene regulation in prokaryotes with reference to the operon model.
14. Explain various cell cycle checkpoints and discuss their role in maintaining genomic stability.
15. Describe the types and functions of cell adhesion molecules.
16. Explain the unique features of special chromosomes, highlighting polytene and lampbrush chromosomes.

(3×9=27)

