

II

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022

SEMESTER - III

20UPBCT3005 - Cell Biology and Molecular Biology

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section A

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Illustrate the cell organization in eukaryotes.
2. Describe the origin of plasma membrane.
3. Predict the possible gene regulations in prokaryotes lac-operon system.
4. Explain any two techniques of gene manipulation with suitable example.
5. Explain the endosymbiotic theory.
6. Relate the role of microtubules in mitosis.
7. Show how the lac operon operates, both in the presence and absence of an inducer in *E.coli*
8. Distinguish between plant cell and animal cell with respect to its structural organization.

Section B

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Sketch the ultrastructure and explain the functions of cell wall.
10. Relate the structural features and its aid in executing the functions of chloroplast.
11. Mitosis produces two genetically identical daughter cells. Explain how S-phase of inter phase and anaphase each help to make this happen.
12. Relate structure and function of lac operon and the ways in which repressors regulate gene expression.
13. Appraise the role of each component in a PCR mixture.
