

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.PBPBT - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - III

20UPBCT3005 - Cell Biology and Molecular Biology

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Explain the structure and function of the cell wall.
2. How do cilia and flagella move in eukaryotic cells?
3. What is autoregulation? Explain how it helps in gene regulation.
4. What is PCR? Explain its steps and importance.
5. Describe the structure and function of mitochondria.
6. Why are vacuoles important in plant cells? Explain their role.
7. Explain the difference between lac-operon and tryp-operon.
8. How is recombinant DNA technology used to produce medicines?

Section C

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

9. Explain the structural organization of prokaryotic and eukaryotic cells with suitable diagrams.
10. Describe the fluid mosaic model of the plasma membrane and explain its significance.
11. Discuss the composition and functions of the cytoskeleton in eukaryotic cells.
12. Describe the process of gene regulation using the lac operon model.
13. Assess the techniques involved in gene cloning and its applications in biotechnology.
