

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.

M.Sc.PBPBT - END SEMESTER EXAMINATIONS - NOV' 2024

SEMESTER - II

**20PPBCT2005 - Cell Biology**

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

### **Section B**

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

1. What role does membrane potential play in cellular signalling and function?
2. Describe the role of chloroplasts in the process of photosynthesis.
3. Explain the main stages of mitotic cell division, and what key events occur during each stage.
4. Sketch the main structural components of a chromosome, and how do they contribute to its overall morphology.
5. How do lysosomes contribute to autophagy, and what role do they play in recycling cellular components?
6. Distinguish the components of the nuclear matrix.
7. Elucidate the various stages of cell cycle.
8. Compare and contrast between heterochromatin and euchromatin.

### **Section C**

I - Answer any **TWO** questions ( $2 \times 10 = 20$  Marks)

9. Describe the primary components of a lipid bilayer, and how do they contribute to membrane fluidity.
10. Relate the key structural differences between the rough endoplasmic reticulum (RER) and the smooth endoplasmic reticulum (SER).
11. Mitochondria is the power house of the cell-Substantiate.
12. Evaluate the key stages of meiosis and write down its significance.

II - Compulsory question ( $1 \times 10 = 10$  Marks)

13. Ascertain the types of chromosomal aberrations.

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