

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 - V

20UPBCT5011 - Bioinstrumentation, Bioinformatics and Biostatistics

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Explain the basic principles of microscopy.
2. Describe the process of specimen preparation for electron microscopy.
3. Differentiate between FAA and Carnoy's fluid as fixatives.
4. Explain the working principle of a spectrophotometer.
5. Outline the steps involved in microtomy.
6. Compare the principles of Gas Chromatography and Thin Layer Chromatography.
7. Discuss the applications of bioinformatics in biological research.
8. Calculate and interpret the standard deviation of a given dataset.

Section C

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

9. Explain the differences between Light Microscope and Electron Microscope.
10. Describe in detail the staining techniques used in microscopy.
11. Explain Beer-Lambert's Law and its application in spectrophotometry.
12. Describe the different biological databases available and their significance.
13. Apply the Chi-Square test to analyze a given biological dataset.
