K25P 3528

Reg. No. : .....

Name : .....

I Semester M.Sc. Degree (C.B.C.S.S. – OBE-Reg./Supple./Imp.) Examination, October 2025
(2023 Admission Onwards)
BOTANY
MSBOT01C04 : Research Methodology, Instrumentation and Biostatistics

Time : 3 Hours Max. Marks : 60

PART – A

Answer **any five** questions. **(5×3=15)**

1. Cite the main objectives of research.
2. Enumerate the characteristics of an ideal measure.
3. Distinguish between discrete and continuous probability distributions.
4. Explain dark field microscope and differentiate it from a bright field microscope.
5. Define chromatography and its general principle.
6. Discuss the main objectives of the Council of Scientific and Industrial Research (CSIR).

PART – B

Answer **any three** questions. **(3×6=18)**

7. Summarize the various methods of data collection in research.
8. Explain the terms level of significance and degree of freedom.
9. Explain fluorescence spectroscopy and mention its applications in biological studies.

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10. Prepare a note on Real-Time PCR (qPCR). Mention its principle and applications.

11. Explain mean deviation, variance and standard deviation as measures of variation.

PART – C

Answer **any three** questions. **(3×9=27)**

12. Explain the legal permissions required for the collection of biological materials.

13. Interpret null and alternate hypothesis with examples.

14. Explain the principles and assumptions underlying Analysis of Variance (ANOVA).

15. Describe light scattering techniques and their application in molecular size determination.

16. Prepare a note on Nanopore sequencing method and its unique features.

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