



K25U 2316

Reg. No. :

Name :

V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/
Improvement) Examination, November 2025
(2019 to 2023 Admissions)

CORE COURSE IN BOTANY/PLANT SCIENCE

5B09BOT/PLS : Research Methodology, Instrumentation and Biostatistics

Time : 3 Hours

Max. Marks : 40

PART – A
(Objective Type Questions)

Answer all :

(4×1=4)

1. Which of the following is the first step in a scientific investigation ?
 - a) Selecting a problem
 - b) Forming a hypothesis
 - c) Data analysis
 - d) Collecting data
2. What does a control group help with in an experiment ?
 - a) Increasing sample size
 - b) Reducing cost
 - c) Eliminating external influences
 - d) Changing variables
3. Which sterilization method uses high-pressure steam ?
 - a) UV radiation
 - b) Chemical sterilization
 - c) Autoclaving
 - d) Laminar air flow
4. Which of the following is a measure of dispersion ?
 - a) Mean
 - b) Median
 - c) Mode
 - d) Range

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PART – B
(Short Essay Questions)

Answer any eight :

(8×2=16)

5. What is experimental bias ?
6. List any 2 UNESCO-recommended lab safety measures.
7. Define correlation and regression.
8. Explain the principle of spectrophotometry.
9. Differentiate between science and pseudoscience.
10. Define impact factor.
11. What is photomicrography ? How is it useful ?
12. What are mounting media ? Name any two examples.
13. List and explain types of experimental errors.
14. What are lens aberrations ? Mention different types.
15. Describe the role of peer review in scientific publications.
16. Write a note on monographs and their relevance in Plant Sciences.

PART – C
(Essay Questions)

Answer any four :

(4×3=12)

17. Write a short essay on types of scientific publications.
18. Describe the principle and uses of a colorimeter.
19. Describe various types of statistical software used in biological research.



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20. Briefly describe the importance of biostatistics in biological research.
21. Describe the process and importance of obtaining a patent.
22. What makes fluorescence microscopy different from conventional light microscopy ?

PART – D
(Long Essay)

Answer any one :

(1×8=8)

23. Discuss the process of tissue preparation in microscopy.
24. Write an essay on the role of computers and digital technologies in modern biological research.
25. Describe the various measures of central tendency. Explain their significance in analyzing biological data.