

**D 120539**

(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
APRIL 2025**

Botany

BOT 4B 04—METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCE

(2019—2023 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer all questions.**Each question carries 2 marks.**Ceiling : 20 Marks.*

1. Write a notes on inflibnet.
2. Define Histogram.
3. Find the significance of statistical tools in data interpretation.
4. What is Mean ?
5. Write the Principle Centrifugation:
6. Brief out the stage micrometer.
7. What is serial sectioning ? Mention its significance.
8. What are natural dyes ?
9. Define double staining.
10. Find the role of Carnoy's fluids I and II.
11. Write the principle of Adsorption chromatography.
12. Give a general account on staining.

**Turn over**

**Section B**

*Answer all questions.  
Each question carries 5 marks.  
Ceiling : 30 Marks.*

13. Discuss about the structure of research report and style of citation.
14. Distinguish controlled and uncontrolled observations,
15. What is Null and Alternate hypothesis with example.
16. Describe the types of Ion exchange chromatography.
17. What are the significance of statistical tools in data interpretation.
18. Discuss about the working and uses Colorimetry.
19. Describe the agents used for killing and fixing with examples.

**Section C**

*Answer any one question  
The question carries 10 marks.*

20. Write an essay on representation of data in both manual and using computer.
21. What is electron microscope ? Elaborate the Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM).

(1 × 10 = 10 marks)

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**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
APRIL 2024**

Botany

BOT4B04—METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCE

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer all questions.**Each question carries 2 marks.*

1. What are buffers ?
2. What is null hypothesis ?
3. Mention the advantages of phase contrast microscope.
4. Define maceration.
5. List the uses of Colorimeter in biological studies.
6. Comment on NCBI.
7. Distinguish between controlled and uncontrolled observations.
8. What is variance ?
9. Define molarity.
10. Comment on vital staining.
11. What is meant by RF value ?
12. What is impact factor ?

(Ceiling 20 marks)

**Section B***Answer all questions.**Each question carries 5 marks.*

13. Explain statistical tools and their significance in data interpretation.
14. Give an account of common fixatives and their preparation.
15. Give an account of the steps involved in scientific method.

**Turn over**

16. Explain the principle and working of spectrophotometer with diagrams.
17. Explain adsorption chromatography with diagrams.
18. Discuss the measures of central tendency.
19. Explain the working and uses of Electron microscopy.

(Ceiling 30 marks)

### Section C

*Answer any **one** questions.*

*Each question carries 10 marks.*

20. What is centrifugation? Explain the working and applications of different types of centrifuges.
21. Give an account of measures of dispersion. Add a note on regression analysis.

(1 × 10 = 10 marks)

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Botany

BOT 4B 04—METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCE

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer all questions, each question carries 2 marks.**Ceiling : 20 marks.*

1. What is control in an experiment ? What is its significance ?
2. List out the importance and limitations of Biostatistics.
3. Explain any *one* style of citation of references.
4. What is a buffer ? Why is it important ?
5. What is the principle of ion exchange chromatography ?
6. What is vital staining ? Cite an example.
7. Differentiate between killing and fixing.
8. What is the use of a cold centrifuge ?
9. Enlist the use of INFLIBNET in research.
10. What is molecular sieving ?
11. What are coal tar dyes ?
12. Differentiate between mean and median.

**Turn over**

**Section B**

*Answer all questions, each question carries 5 marks.*

*Ceiling : 30 marks.*

13. Write a note on the recent methods of presentation of research findings.
14. Explain the principle, working and applications of spectrophotometry.
15. What are buffers ? Explain its preparation and list the uses of buffers.
16. Discuss the various methods of data collection.
17. What is the significance of statistical tools in data interpretation ?
18. Expand and explain the composition and uses of CRAF.
19. Describe the methods of dehydration and infiltration.

**Section C**

*Answer any one question, The question carries 10 marks.*

20. Discuss the different types of chromatographic techniques used in research
21. What is the structure of a research report ? Explain how the internet facility can aid the process of research.

(1 × 10 = 10 marks)