TM253641S

Reg. No :.....

Name :.....

MASTER'S DEGREE (C.S.S) EXAMINATION, OCTOBER 2025

2024 ADMISSIONS REGULAR

SEMESTER III - CORE COURSE BOTANY

BO3C09TM20 - Research Methodology, Microtechnique, Biostatistics and Biophysical Instrumentation

Time : 3 Hours

Maximum Weight : 30

Part A

I. Answer any Eight questions. Each question carries 1 weight (8x1=8)

1. Explain *h*-index.
2. Explain IMRAD system
3. What is Histochemistry?
4. Briefly explain the staining of paraffin sections.
5. Explain the glycerine – xylene method for preparation of whole mounts.
6. What are smears? What is its application?
7. Explain level of significance.
8. Write notes on principles of field experimentation.
9. Write a detailed note on ultracentrifuges.
10. Explain the principle and applications of Flow cytometry.

Part B

II. Answer any Six questions. Each question carries 2 weight (6x2=12)

11. What is a journal? Explain the different types of journal.
12. What are the methods for presentation and publication of research outcomes?
13. Explain briefly the working of Rotary microtome.
14. Write brief note on Glycerine/xylol whole mounting method.
15. Write notes on Factorial design.
16. What are the characters of a normal distribution?
17. Differentiate between Column chromatography and ion exchange chromatography.
18. Give an account on the principle and working of a spectrophotometer.

Part C

III. Answer any Two questions. Each question carries 5 weight (2x5=10)

19. Explain the structure and format of a dissertation.
20. Write an essay on importance of killing and fixation in microtechnique. Add a note on the types of fixation and fixative images.
21. "Correlation measures the strength of association, while regression predicts the value of one variable based on another." Elaborate on this statement with examples
22. What is chromatography? Briefly explain any five types of chromatographic techniques used in biological research.