

University of Kerala
Ph.D Entrance Examination in Botany
Model question paper

Time:3hrs

Maximim marks:100

Part A Research methodology

Answer any ten questions. Each question carries five marks

1. Enlist the criteria for identifying a suitable research problem. Explain the process of formulating a problem.
2. What is the importance of stating a research hypothesis? Describe the characteristics of a usable research hypothesis.
3. What is random sampling? Enumerate the different methods for data collection
4. Briefly explain the important concepts and basic principles relating to research design
5. Give an account on the any two of the statistical software packages used in biology for data analysis.
6. What is the importance of research funding? Provide an account on how to write a project proposal for research
7. Explain the ethics involved in scientific research and publications. What is the role of ethical committees in the process.
8. Describe the importance of layout, structure and language in the different types of research reports. Highlight the differences.
9. Give an account on the copy right issues and plagiarism. What are the protective measures adopted in scientific research to check plagiarism?
10. Describe the different styles of reference citation. What are the reference manager softwares?
11. What is the difference between poster and oral scientific paper presentations? Explain how an oral presentation can be made most effective?
12. Define a scientific paper. Provide an overview on the preparation of a scientific paper.

13. Explain the process of scientific paper review. Add a note on proof reading and publication process.
14. Discuss the importance of illustrations, graphs and photographs in scientific papers.
15. What is the relevance of questionnaires in data collection and interpretation?

Part B : Botany

Answer any ten questions. Each question carries five marks

1. Write a note on anomalous cambial activities in Piper.
2. Explain thallus organization in Algae
3. What are monoclonal antibodies. Explain how it can be synthesized.
4. Describe evolutionary trends in gametophytes of Pteridophytes
5. Write about modern concepts and trends in plant taxonomy.
6. Give an account of tissue processing technique for serial sections
7. Explain ecological succession
8. Write a note on sustainable use of Bioresources
9. Strategies for conservation of threatened species
10. Describe, mode of cultivation, processing and uses of Cardamom and Turmeric
11. What are the different sub stages of meiosis ? Explain the different process and importance of each stage
12. Briefly explain the process of protein synthesis
13. Give an account on the different conservation strategies adopted for the protection plants
14. Briefly explain different molecular markers used for the analysis of diversity in plants
15. Give an account on the structural and numerical variations of chromosomes.