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Second Semester B.Sc. Degree Examination, December 2021

First Degree Programme under CBCSS

Botany

Foundation Course

BO 1221 : METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCES

(2014 – 2018 Admission)

Time : 3 Hours Max. Marks : 80

I. Write a short note on the following. All questions are compulsory.

1. Science
2. Inductive reasoning
3. Null hypothesis
4. pH
5. Double staining
6. Chromatography
7. Cryopreservation
8. Standard deviation
9. Name a reagent used for dehydration
10. Micrometry.

(10 × 1 = 10 Marks)

P.T.O.

II. Answer **any eight** of the following :

11. What are digital sources of information?

12. What is the danger of pre conceived ideas?

13. Briefly explain the basis of scientific law.

14. What is meant by scientific temper?

15. What are measures of central tendency?

16. Briefly explain how data analysis is carried out.

17. What is the advantage of rotary microtome?

18. What is dark field illumination?

19. State Beer-Lambert law.

20. What is meant by variance?

21. Explain a significance test.

22. Explain how proteins can be separated according to their charge and size.

(8 × 2 = 16 Marks)

III. Answer **any six** of the following :

23. Describe the various steps involved in scientific method.

24. Differentiate practical, theoretical and scientific knowledge.

25. Give an account on the different type of stains used.

26. Explain different tools to present a data.

27. Give a short account on sampling techniques.

28. Explain how a plant cell can be studied using cytological methods.

29. Explain mobile phase and stationary phase with an example.

30. Briefly explain the role of buffers in biological research.

31. Write short note on killing and fixation agents.

(6 × 4 = 24 Marks)

IV. Write essay on **any two** of the following :

32. Give a brief account on the types of microscopes and their application.

33. Briefly explain how statistics is helpful in data analysis.

34. Give a brief account on scientific information and ethics in science.

35. Briefly explain the principles and applications of spectrophotometer and centrifuge.

(2 × 15 = 30 Marks)