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Reg. No. : .....

Name : .....

Second Semester B.Sc. Degree Examination, December 2021

First Degree Programme Under CBCSS

Botany

BO 1221 : METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCES

(2019 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions in a word or one/two sentences. Each question carries 1 mark.

1. Define pseudoscience.
2. What is an interdisciplinary science?
3. Write down the equation for the calculation of standard deviation.
4. What is a t-test?
5. Define ogive
6. Name the device used to control the intensity of light in a compound microscope
7. What is mean by maceration?
8. What is the pH of 0.001 M HCl?
9. What is the purpose ethidium bromide in AGE?
10. Define centrifugal force.

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer **any eight** questions **Each** question carries **2** marks. Answer not to exceed one paragraph

11. Differentiate inductive reasoning from deductive reasoning.
12. How will you define integrity' as an ethical principle?
13. How a hypothesis is different from a law?
14. What are the advantages of arithmetic mean over median?
15. How will you calculate coefficient of variation?
16. How frequency polygon is different from frequency curve?
17. What is the difference between Type I and Type II errors?
18. Differentiate between basic stains and acidic stains
19. What are mordants? Cite two examples
20. Explain Beer-Lambert's law.
21. What is the principle of freeze drying?
22. What is differential centrifugation?

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. **Each** question carries **4** marks. Short essay type.

23. Write a note on non-scientific methods.
24. Comment on different types of sources for scientific information.
25. Write a note on different types of data in sciences.
26. Write a brief note on probability sampling.
27. Comment on common killing and fixing fluids.

28. Add a note on rotary and sledge microtome.

29. Explain the principle and applications of spectrophotometer.

30. Write down the components of PAGE.

31. Explain the principle and working of paper chromatography.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. **Each** question carries **15** marks. Essay type.

32. Differentiate science, non-science and pseudo-science. Explain scientific reasoning and the components of science.

33. Give an account on different measures employed to calculate dispersion in biostatistics.

34. Explain the principle of Electron Microscope. Briefly describe the different types with their applications.

35. What are buffers? Give an account on different types of buffers with their application in biological research.

(2 × 15 = 30 Marks)