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Name : Kyusho Hita...

Second Semester B.Sc. Degree Examination, December 2021

First Degree Programme Under CBCSS

Botany

BO 1221 — METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCES

(2020 Admission Regular)

Time : 3 Hours Max. Marks : 80

I. Answer **all** questions in **one** word or sentence.

1. Define pseudo science.
2. What is Science?
3. Define knowledge
4. What is Primary data
5. What is Null hypothesis?
6. What is Mean?
7. Define pH.
8. Expand DPX.
9. What is PAGE?
10. What is Freeze drying?

(10 × 1 = 10 Marks)

P.T.O.

II. Answer any **eight** questions, short answer (not to exceed **one** paragraph).

11. What is scientific temper?

12. Explain empiricism in science.

13. Explain various disciplines in science.

14. What is the significance of falsification in science?

15. Comment on depositories of scientific information?

16. What is inductive reasoning?

17. What are different methods of data collection?

18. Explain how data can be expressed by graphical methods.

19. What are ogives?

20. Define arithmetic mean and its significance.

21. Provide composition of Farmer's formula and its specific uses.

22. What are the parts of a compound microscope?

23. What are the properties of an ideal stain?

24. What are the applications of density gradient centrifugation?

25. Give the properties of the stains used in agarose gel electrophoresis.

26. State the purpose of Camera Lucida.

(8 × 2 = 16 Marks)

III. Short Essay (Answer any **six** questions)

27. Shortly describe the various revolutions in science and technology.

28. Comment on the significance of transparency in scientific communications.

29. Explain the role of digital resources in science.

30. What is tabulation, what is its importance in data representation?

31. What is standard deviation, comment on its significance?

32. What is the line transect method of sampling?

33. Comment on the use of significance tests with a suitable example.

34. What is the basic principles and applications of phase contrast microscope?

35. What is micrometry, what are the procedure for measuring an object using micrometry?

36. What makes ethyl alcohol one of the most prefered dehydrating agent?

37. Explain paper chromatography, comment on its uses.

38. How henderson and hasselbach equation can be helpful determining pH of a buffer?

(6 × 4 = 24 Marks)

IV. Essay (Answer any **two** questions)

39. Briefly explain the process of scientific method.

40. What are the various methods used for the graphical representation of data, comment on its merits

41. What are the different measures of central tendency and dispersion used in statistical analysis of scientific data

42. Give the procedure involved in double staining using the paraffin method. Comment on the properties of various reagents used.

43. With suitable illustrations explain the various separation techniques used in biological methods

44. What are buffers? What is the usage of buffers in a biological system? Comment on the parts and working of a pH meter.

(2 × 15 = 30 Marks)
