

Reg. No

Name

19P4042

MSc DEGREE END SEMESTER EXAMINATION - MARCH/APRIL 2019

SEMESTER 4 : BOTANY

COURSE : 16P4BOTT16 : BIostatistics, Microtechniques and Biophysics

(For Regular - 2017 Admission and Supplementary - 2016 Admission)

Time : Three Hours

Max. Marks: 75

Section A

Answer any 8 (2 marks each)

1. What is the principle behind killing and fixation?
2. What is free hand sectioning? Mention its merits and demerits.
3. Explain TBA/ Hygrobutol method.
4. What are objective and eyepiece of a microscope? Which of these help in giving maximum magnification?
5. What is the application of TLC in biology?
6. Explain the use of GC coupled with MS.
7. What is a frequency distribution? Explain when you use frequency data in research.
8. Differentiate variance and standard deviation.
9. Explain correlation co-efficient. Add a note on its usage.
10. Differentiate correlation and regression.
11. What is a replicate in sampling design?
12. What is ANOVA?

(2 x 8 = 16)

Section B

Answer any 7 (5 marks each)

13. Explain the different Killing and fixing fluids.
14. Explain the methods of staining for TEM.
15. What is the significance of Haupt's adhesive? How is it prepared?
16. Describe the principles and application of E-SEM.
17. What are the parts of a simple microscope? Justify why do we need advanced microscopes.
18. What is the principle involved in X- ray diffraction? Describe how this technique has helped in elucidating the structure of DNA.
19. What is data? Explain different types of data and how do you use data for a research work.
20. What are the significances and limitations of simple linear regression?
21. What is Normal distribution? What are its significances?

22. Explain parametric and non-parametric statistic.

(5 x 7 = 35)

Section C

Answer any 2 (12 marks each)

23. What is staining? Explain its principle. What are the different techniques to prepare single, double and triple stained preparations?

OR

24. Review critically the basic principles involved in spectrophotometry. Write a note on the differences between colorimetry and spectrophotometry.

25. What are the principles of experimental design? Compare completely randomized, randomized block and Latin square designs.

OR

26. Write an essay on ANOVA. What are the significances of ANOVA in testing hypothesis?

(12 x 2 = 24)