18P115 (Pages: 2) Name: …………………….

Reg. No…………………...

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2018
(Regular/Supplementary/Improvement)
(CUCSS-PG)
CC17 ZO1 C02 - BIOINSTRUMENTATION AND BIOSTATISTICS
(Zoology)
(2017 Admission onwards)

Time: Three Hours   Maximum: 36 Weightage

I. Answer *all* questions. Each question carries 1 weightage.

1. Explain the principle of phase contrast microscope.

2. What is circular dichroism? Give its applications.

3. Explain flow cytometry and its uses.

4. Describe the fixation and staining techniques.

5. Enumerate the applications of PAGE.

6. Explain autoradiography and its uses.

7. Resolving power of microscope.

8. What is PET? Explain its principle.

9. What is buffer? Explain its importance.

10. What is X-ray diffraction? Give its uses.

11. Define skewness and kurtosis.

12. What is ANOVA?

13. Explain Simpsons Dominance index.

14. What is critical region?

(14 x 1 = 14 Weightage)

II. Answer any *seven* questions. Each question carries 2 weightage.

15. Explain Immunoelectrophoresis and its applications.

16. Comment on the applications of nanomedicines.

17. Explain the different types of radiation detectors.

18. Enumerate the applications of radioisotopes.

19. Explain NMR and ESR spectroscopy.

20. What is LASER? Explain its applications in biology.

21. Describe briefly the various sampling methods.

22. Describe primary and secondary data.

23. Differentiate parametric and nonparametric statistics.

24. What are the differences between regression and correlation analyses?

(7 x 2 = 14 Weightage)

III. Answer any *two* questions. Each question carries 4 weightage.

25. Describe the principle and applications of any four chromatographic techniques used in separating and analysing biomolecules.

26. Comment the role of nanotechnology in environmental management.

27. Give the laws of probability. Explain the Binomial, Poisson and Normal distributions.

28. What is the significance of statistical tests? Explain the methods of t-test, chi-square test and F-test.

(2 x 4 = 8 Weightage)

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