

## FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2023

(Regular/Improvement/Supplementary)  
ZOOLOGY

## FZOL1C02-BIOPHYSICS AND BIOSTATISTICS

Time: 3 Hours

Maximum Weightage: 30

**Part A: Answer any *four* questions. Each carries *two* weightage.**

1. Explain the principle of immune electrophoresis.
2. Comment on autoradiography and its uses.
3. Briefly describe PET.
4. Define correlation with an example.
5. Explain the advantages and disadvantages of census.
6. Enumerate the properties of colloids.
7. Differentiate between primary and secondary data.

**(4 × 2 = 8 weightage)****Part B: Answer any *four* questions. Each carries *three* weightage.**

8. What is echolocation? Enumerate its applications.
9. Explain NMR spectroscopy.
10. Comment on the effects of positive and negative G forces.
11. Describe the principle and working mechanism of TEM.
12. Explain the principle of ANOVA test and give its significance.
13. Briefly describe the different random sampling techniques.
14. The following data collected by one researcher from different college campuses of a university, related with the dog's number in campus and availability of food waste accumulation in kg/ day. Give the regression equations X on Y and find the number of dog if the food waste is 20 kg per day.

College	Number of Dogs	Food waste in Kg/day
A	15	29
B	7	12
C	2	2

**(4 × 3 = 12weightage)****(P.T.O.)**

**Part C: Answer any *two* questions. Each carries *five* weightage.**

15. Explain the applications of nanotechnology in the field of health care.
16. Describe the principle and applications of any five chromatographic techniques.
17. Explain the biological effects of ionizing radiations.
18. Explain the laws of probability. Describe the Binomial, Poisson and Normal distribution patterns.

**(2 × 5 = 10 weightage)**