

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2021
(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. Comment on PET.
2. What is Gibb's Donnan equilibrium?
3. Write on application of Circular dichroism.
4. Write on radioactive disintegration and half life.
5. Differentiate between skewness and kurtosis.
6. What is standard error?
7. Comment on t-test. State the significance.

(4 × 2 = 8 weightage)

Part B: Answer any *four* questions. Each carries *three* weightage.

8. Write a short essay on properties of colloids.
9. Comment on Henderson Hasselbalch equation in calculating the pH of buffer solutions.
10. Write a short essay on NMR and ESR spectroscopy.
11. What is G force? Comment on positive and negative G forces and its effects.
12. Differentiate between binomial and poisson probability distribution.
13. Comment on Confidence interval, levels of significance and Critical region in inferential statistics.
14. Differentiate between random and non random sampling. Mention major types of sampling strategies.

(4 × 3 = 12 weightage)

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

15. Write an essay on correlation and regression analysis. Describe the methods for the analysis.
16. Write an essay on bioacoustics with a stress on physical organization and sound transmission of ear. Mention the echolocation.
17. Write an essay on principle, working and applications of HPLC. Discuss the advantages and limitations.
18. Write a comparative account of principle, working and applications of SEM and TEM.

(2 × 5 = 10 weightage)