8242

M.Sc. IIIrd SEMESTER EXAMINATION, 2019
ZOOLOGY
Paper - II
COMPUTATIONAL BIOLOGY, BIOSTATISTICS AND BIOINFORMATICS

Time: Three Hours
Maximum Marks: 80

PART – A [Marks: 20]

Answer all questions (50 words each).

All questions carry equal marks.

PART – B [Marks: 40]

Answer five questions (250 words each).

Selecting one from each unit. All questions carry equal marks.

PART – C [Marks: 20]

Answer any two questions (300 words each).

All questions carry equal marks.

PART – A

Q.1 (i) Define biostatistics.

(ii) What is Sampling?

(iii) Define students 't' test.

(iv) What is SPSS?

(v) Define 'Control'.

(vi) What is variable?

(vii) Define Computer virus.

(viii) What is 'INFLIBNET'?

(ix) Define genomics.

(x) What are data bases in biology?

PART – B

UNIT –I

Q.2 Write short note on following.

(i) Line diagram or graph.

(ii) Histogram

(iii) Bar diagram

(iv) Cumulative frequency polygon (Ogives)

Q.3 Prepare a Pie-chart on the basis of following data. Milk production of four dairies of four cities per day (liters) are as follows.

Cities:	Delhi	Mumbai	Kolkata	Bengaluru
Production:	700	620	320	640

UNIT –II

Q.4 Define chi-square (x^2) and mention its formula. What do you mean by goodness of fit and contingency table?

Q.5 Calculate standard deviation and its coefficient from the following data:

Marks out of 10	0-2	2-4	4-6	6-8	8-10
No. of Students	2	5	15	7	1

UNIT –III

Q.6 Why control studies is essential in most of the biological experiments. Support your statements with few examples.

Q.7 Give a brief account of designing and methodology of an experiment.

UNIT –IV

Q.8 Describe MS PowerPoint and its important features.

Q.9 What is google scholar? How does it help in research work?

UNIT –V

Q.10 Write a note on proteomics.

Q.11 What are Microarrays? Describe the role of Microarray.

PART – C

Q.12 What do you mean by Data, Sample, Parameter frequency distribution, cumulative frequency sampling.

Q.13 What are regression analysis? Give a short note on linear regression analysis.

Q.14 Explain the following:

    (i)   Characteristics of a good research design.

    (ii)   The factorial design.

Q.15 Write a short note on the following:

    (i)   E-books

    (ii)   Internet tools

    (iii) Antivirus tools

    (iv) Digital library

Q.16 Discuss briefly the scope and importance of Bioinformatics in India.