Total No. of Printed Pages:2

SUBJECT CODE NO:- 6073
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-III)
Examination March/April-2022 (To Be Held In June/July-2022)
Zoology
Quantitative Biology - 502

[Time: 3.45 Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B 1) Part A is compulsory.
2) Attempt any five question from part B.
3) Draw neat and well labelled diagram wherever necessary.

Part-A

Q.1 Attempt the following multiple choice questions. 20

1) Arithmetic mean is 14 and number of observation are 20 then sum of all values is
a) 8 b) 32 c) 280 d) 1.667

2) The observation which occurs most frequently in a sample is
a) Median b) mean deviation c) Standard deviation d) mode

3) What symbol is used to represent chi – square?
a) ψ b) F c) σ d) x^2

4) The standard deviation of scores 1,2,3,4,5 is
a) $\sqrt{2}$ b) $\sqrt{3}$ c) 2/5 d) 3/5

5) The ANOVA procedure is a statistical approach for determining whether or not
a) The means of two samples are equal.
b) The means of two or more samples are equal.
c) The means of more than two samples are equal.
d) The means of two or more populations are equal.

6) Value of probability ranges between
a) 0 & 1 b) +1 & -1 c) 0 & ∞ d) &-;∞& +;∞

7) Which of the following is protein sequence database
a) DDBJ b) EMBJ c) Gene Bank d) PIR

8) Which of the following is an E.coli model organism database
a) Ecogene b) Ecobase c) Eco seq d) Colgene

9) Sequence alignment helps scientists
   a) To trace out evolutionary relationships
   b) To infer the functions of newly synthesized genes
   c) To predict new members of gene families
   d) All of these

10) PDB is
   a) Primary database for macromolecules.
   b) Can be determined by gel electrophoresis
   c) Composite database
   d) Database for three dimensional structure of biological macromolecule

Part 'B'

Q.2 Define classification of statistical data? Illustrate with examples the various methods of classifying statistical data. 12

Q.3 Describe coefficient of standard deviation. 12

Q.4 What is x^2 test? Explain the uses of Chi – square distribution. 12

Q.5 What is student's t-test? Give its assumptions and uses. 12

Q.6 Explain nucleic acid and protein sequence databases. 12

Q.7 Explain phylogenetic analysis. 12

Q.8 Calculate the mean, median and mode from the following data: 12

Class Interval (C.I)	Frequency (F)
9-11	03
12-14	05
15-17	08
18-20	12
21-23	07
24-26	05