

No. of Printed Pages : 4

MZO-006

MASTER OF SCIENCE (ZOOLOGY)
(MSCZOO)

Term-End Examination

June, 2026

**MZO-006 : BIOSTATISTICS AND
BIOINFORMATICS**

Time : 2 Hours

Maximum Marks : 50

Note : (i) Attempt any **five** questions.

(ii) All questions carry equal marks.

1. (a) Explain discrete and continuous data providing biological examples for each. 5
- (b) Describe the role of the rejection route in hypothesis testing with the z -test. 5
2. Differentiate between the following pairs of terms : $4 \times 2 \frac{1}{2} = 10$
 - (a) Primary data and Secondary data

- (b) One-way ANOVA and two-way ANOVA
 - (c) Cladogram and Phylogram
 - (d) PAM and BLOSUM
3. Write short notes on the following : $4 \times 2\frac{1}{2} = 10$
- (a) Bivariate data
 - (b) Standard error
 - (c) Data mining in bioinformatics
 - (d) TaqMan probes
4. (a) Explain the classical definition of probability. Discuss with suitable examples. 5
- (b) What is the p-value ? Write its significance in hypothesis testing. 5
5. (a) A hospital administrator wants to assess the bed occupancy rate in the ICU over a month (30 days). The data

represents the number of ICU beds
occupied daily : 5

Number of beds occupied	Number of days
1	2
2	5
3	8
4	10
5	3
6	2

- (i) Compute the mean, median and mode of bed occupancy daily.
- (ii) What does the mode suggest about ICU utilisation ?
- (b) What is the FASTA file format, and how is it structured ? 5

6. (a) What is sequence alignment and why is it significant in bioinformatics ? 5
- (b) Discuss the role of the Protein Data Bank (PDB) in structural biology. 5
7. Define Microarray. Explain the various steps involved in microarray design. 10

x x x x x