

Post Graduate Teaching Department of Zoology
An Autonomous Department of
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
M. Sc. Zoology Semester -IV (CBCS)
Theory Examination Summer-2023

Name of the Paper: Paper 4T1: Biotechniques, Biostatistics, Ethology, Toxicology and Bioinformatics

Time: 3hrs

Maximum Marks: 60

Note: -

1. All the questions are compulsory.
2. All questions carry equal marks.
3. Draw well labelled diagrams and charts wherever necessary.

Q.1 Describe in detail the animal cell and tissue culture.

12

OR

Write notes on: -

- (a) Basic principle of sedimentation.
- (b) Electrophoretic separation techniques.

Q.2 What is the type of below data? Calculate mean, median and mode of below data.

12

Class interval	20-30	30-40	40-50	50-60	60-70
Frequency	10	10	5	15	10

OR

Write notes on: -

- (a) Standard deviation (SD).
- (b) Environmental components in development of animal behavior.

Q.3 Give detail account of absorption, distribution, biotransformation and excretion of toxicants.

12

OR

Write notes on: -

- (a) Toxicity tests.
- (b) Automobile emission.

Q.4 Describe in detail Biological databases.

12

OR

Write notes on: -

- (a) Scope of bioinformatics in India.
- (b) Sequence alignment.

Q.5: Write in brief on followings: -

12

- (a) Gas chromatography.
- (b) Binomial probability distribution.
- (c) Pesticides.
- (d) Phylogenetic tree.