

M.Sc. (Zoology) (CBCS Pattern) Semester-IV  
**PSCZOOT13 - Paper-XIII : Biotechniques, Biostatistics, Ethology, Toxicology  
and Bioinformatics**

P. Pages : 1

Time : Three Hours



**GUG/W/24/11427**

Max. Marks : 80

- Notes :
1. All questions are compulsory.
  2. All questions carry equal marks.
  3. Draw well labelled diagrams wherever necessary.

**1. Write an account on Thin Layer Chromatography. 16**

**OR**

Write notes on-

- a) Sterilization Techniques
- b) Radioactive Isotopes

**2. Write an account on Animal ethics Concept, Organization and their functions. 16**

**OR**

Write notes on-

- a) Probability and Probability Distribution.
- b) Chi square test.

**3. Write an account on Heavy metals and radioactive substances as Environmental toxicants. 16**

**OR**

Write notes on-

- a) Acute and chronic toxicity tests.
- b) Biotransformation and excretion of toxicants.

**4. Write an account on Biological Databases. 16**

**OR**

Write notes on-

- a) Phylogenetic Analysis
- b) Sequence alignment

**5. Attempt the following. 16**

- a) Cryopreservation of cells
- b) Dispersion and variance
- c) Food additives
- d) Scope of bioinformatics in research

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