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**24-ZO-23**

**M.Sc. II SEMESTER [MAIN/ATKT] EXAMINATION  
JUNE - JULY 2024**

**ZOOLOGY**

Paper - III

**[Tools and Techniques in Biology]**

*[Max. Marks : 75]*

*[Time : 3:00 Hrs.]*

*[Min. Marks : 26]*

**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

**Q. 1** Give a detailed account of Centrifugation technique. (15 Marks)

**OR**

Write notes on **any two** - (15 Marks)

- i) Flame Photometer.
- ii) Electrophoresis.
- iii) Colorimeter.

**Q. 2** Explain cryopreservation of cell, tissue, organs in detail. (15 Marks)

**OR**

Write short notes on **any two** - (15 Marks)

- i) Inoculation methods.
- ii) Basic design and application of Fermentor.
- iii) Freeze fracture and freeze drying method.

**Q. 3** Describe types and application of different Radio isotopes. (15 Marks)

**OR**

Explain immunological techniques and its applications. (15 Marks)

**Q. 4** Short notes on - (15 Marks)

- i) Dehydration of tissue and paraffin block preparation.
- ii) Tissue Staining (Double).

**P.T.O.**

**OR**

Describe essential components and preparation of tissue culture media. (15 Marks)

**Q. 5** Explain Karyotyping and giant chromosome. (15 Marks)

**OR**

Write short note on - (15 Marks)

- i) DNA sequencing method.
- ii) *In Situ* hybridization (FISH and GISH)

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