# 2022
## M.Sc.
## Third Semester
CORE – 10
## ZOOLOGY
*Course Code: MZOC 3.21*
(Techniques in Biology)

*Total Mark: 70*                    *Pass Mark: 28*
*Time: 3 hours*

*Answer <u>five</u> questions, taking <u>one</u> from each unit.*

### UNIT–I

1. Explain the working principle of TEM and SEM.          7+7=14

2. Explain the various steps involved in separation of sub-cellular organelles.
                                                            14

### UNIT–II

3. Write the basic concept and stages involved in PCR.          14

4. Write notes on the following:                    7+7=14
   (a) Ion-exchange chromatography
   (b) Gel filtration chromatography

### UNIT–III

5. Define frequency distribution. Explain the various terms associated with it.          2+12=14

6. Define coefficient of variation. Find mean, standard deviation, and coefficient of variation from given data.          2+12=14

| Size of Item | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
|---|---|---|---|---|---|---|---|
| Frequency | 5 | 7 | 9 | 15 | 10 | 4 | 4 |

## UNIT–IV

7.  Write notes on binomial and Poisson distribution for discrete data.

    7+7=14

8.  Distinguish between correlation and regression. Explain the various types of correlation. 2+12=14

## UNIT–V

9.  Write notes on BLAST and FASTA. 7+7=14

10. Perform local alignment for these two sequences using Smith-Waterman method. 14
    Seq 1 = AATCG
    Seq 2 = AACG

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