

2021
M.Sc
Third Semester
CORE – 10
ZOOLOGY
Course Code: MZOC 3.21
 (Techniques in Biology)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Explain the various components of UV-visible spectrophotometer. 14
2. Discuss the difference between the working principle of autoradiography and radiommuoassay. 7+7=14

UNIT-II

3. (a) Write the principle of electrophoresis. 4
 (b) Discuss the use of agarose and acrylamide in electrophoresis. 5+5=10
4. Write a comparative account on northern, southern, and western blotting. 14

UNIT-III

5. Find the mean, median and standard deviation of the following data.

X	2	4	6	8	10	12	14
Frequency	3	15	5	10	7	4	1

6. Distinguish between variables and sampling. Explain the classification of variable based on nature of variables. 2+12=14

UNIT-IV

7. For a random sampling (A) of 10 albino rats fed on vitamins, the increase in weight in grams in 15 days and for another sample (B) 12 albino rats fed on another vitamin, increase in weight which are given in table.

A	10	06	16	17	13	12	08
B	07	13	22	15	12	14	21

Test whether the samples come from population having same variance.

(The $F_{0.05}$ for $v_2 = 11$; $v_1 = 9$ is 3.11)

14

8. Find the correlation coefficient between the heights of fathers and sons from the following data.

14

Height of father	64	65	66	67	68	69	70
Height of son	66	67	68	69	70	71	72

UNIT-V

9. Distinguish between primary and secondary databases. Discuss the databases of NCBI.

4+10=14

10. Perform global alignment for these two sequences using Needleman-Wunsch method.

Seq 1 = CCGTCG

Seq 2 = CCGCG

14