

2021
M.Sc.
Third Semester
DISCIPLINE SPECIFIC ELECTIVE – 02
BOTANY
Course Code: MBOD 3.21 (A)
(Research Methodology & Biostatistics)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. Explain the meaning of research. How does a researcher identify research problems? Explain the difference between fundamental and applied research using suitable examples. 4+3+7=14
2. Explain the steps of research process. 14

UNIT-II

3. Briefly explain the ethical principles in research. Why is it important to maintain research ethics? 10+4=14
4. Write brief accounts on: 7+7=14
 - (i) Copyright
 - (ii) Plant variety protection

UNIT-III

5. If you were to test the physiological response of three varieties of rice, using three levels of nitrogen application with two levels of water treatments in a heterogeneous landscape. What experimental design, treatment plan and number of replications would be appropriate? Give justification. Show the design in figure. 3+7+4=14
6. Define sample. Explain the different methods of sampling. 2+12=14

UNIT-IV

7. What is standard deviation? What are its uses? Find the coefficient of variance and standard deviation from the following data set. 2+3+9 = 14

No	3.5-4.5	4.5-5.5	5.5-6.5	6.5-7.5	7.5-8.5	8.5-9.5	9.5-10.5	10.5-11.5	11.5-12.5
<i>f</i>	9	14	15	11	22	13	15	9	12

8. What is null hypothesis? The following table shows the score of 11 subjects with scores at 2 different times. Work out the problem and find out whether to accept or reject null hypothesis by citing reasons for your inference. 2+9+3=14

Subjects	1	2	3	4	5	6	7	8	9	10	11
Score1	3	3	3	12	15	16	17	19	23	24	32
Score2	20	13	13	20	2	32	23	20	25	15	30

UNIT-V

9. Give an outline of the structure of research proposal. Discuss the importance and objective of each section in the proposal. 4+10=14
10. How do scientific and non-scientific writings differ? Provide an outline of research paper writing and briefly explain the content of each section. 3+11=14