

2023
M.Sc.
Third Semester
 DISCIPLINE SPECIFIC ELECTIVE – 02
BOTANY
Course Code: MBOD 3.21(A)
 (Research Methodology & Biostatistics)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Explain the meaning of scientific research. What are the criteria of a good research? Explain the difference between research methods and methodology. 4+5+5=14
2. Briefly explain the various steps of the research process. 14

UNIT-II

3. Discuss on the merits and demerits of TRIPS from India's context. 14
4. (a) How trademark differ from trade secret? 7
 (b) Write brief accounts on plant breeders' rights. 7

UNIT-III

5. Construct an experimental design to test the yield of four rice varieties grown under three levels of water application in a heterogenous environment. Show appropriate design diagrammatically. Give justification for the design of your choice. Explain your design based on the principles of randomization, replication, and local control. 2+3+9=14
6. What is a sample? Describe the different types of probability sampling? 2+12=14

UNIT-IV

7. Write notes on the following: 7×2=14
(a) Correlation and regression
(b) Type I and type II errors with examples
8. Given in the table are the test scores of female and male students in an M.Sc. Botany entrance examination. Find out if the difference is statistically significant. What is the degree of freedom for this test statistic? Explain the inference from the test result.
(Given: alpha level = 0.05 at appropriate df, the critical t value = 2.101).

Female	38	3	42	35	38	49	20	41	33	28
Male	10	16	13	42	22	33	7	5	15	14

$$8+2+4=14$$

UNIT-V

9. What is the difference between scientific and non-scientific writing? Discuss the importance of abstract, literature review, discussion, and bibliography in scientific writing. 2+12=14
10. Explain the different components in a poster presentation. What is the importance of giving scientific paper presentation in conference? 10+4=14
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