

**M.Sc. BIOTECHNOLOGY**  
**Third Semester (Repeat)**  
**RESEARCH METHODOLOGY**  
**(MBT - 303)**

**Duration: 3Hrs.**

**Full Marks: 70**

Part-A (Objective) =20  
Part-B (Descriptive) =50

**(PART-B: Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**Answer the following questions:**

1. "Interpretation is an art of drawing inferences, depending upon the skill of the researcher". Elucidate the given statement explaining the technique of interpretation. (10)
2. What is research design? Discuss the basis of stratification to be employed in sampling public opinion on inflation. (4+6=10)
3. How do you define a research problem? Give your views on its significance towards the benefit of the society and people. (4+6=10)

Or

Give a comparative account on 'research problem' and the 'research constraint'. Explain the major constraints encountered by the researchers in carrying out research in our country. (5+5=10)

4. Write short notes on the following : (2×5=10)
  - (i) Experience survey
  - (ii) Pilot survey
  - (iii) Objective of research
  - (iv) Depth interview
  - (v) Research Hypothesis

5. How Professor R. A. Fisher's name became associated with the experimental design? Explain the three basic principles of experimental design. (4+6=10)

Or

What is 'statistical method'? Explain the importance of applying 'statistical methods' of data analysis in the processing of experimental data. (5+5=10)

\*\*\*\*\*

**M.Sc. BIOTECHNOLOGY**  
**Third Semester (Repeat)**  
**RESEARCH METHODOLOGY**  
**(MBT - 303)**

**Duration: 20 minutes**

**Marks – 20**

**(PART A - Objective Type)**

**I. Tick true or false:**

**1×10=10**

1. 'Latin square design' is not applicable in the agronomical researches. (True/False)
2. Search for documented records of past research works is the primary requirement before finalization of the study programme. (True/False)
3. 'Experience survey' provides facilitates in successfully carrying out the exploratory research studies. (True/False)
4. The basic objective of scientific research is to establish the truth. (True/False)
5. Validity is more critical to measurement, than reliability. (True/False)
6. Paired t-test is applied to examine the correlation between two variables of a statistically designed field experimental data. (True/False)
7. Pilot survey provides final data for analysis and compilation of the conclusive research report. (True/False)
8. To assess the reliability of any experimental data, statistical analysis using appropriate method is indispensable. (True/False)
9. The pre-determined plots or the blocks, where different treatments are applied, are known as 'Experimental units'. (True/False)
10. Time targeted work plan is important in the successful completion of the scientific researches. (True/False)

**II. Tick the correct answer:**

**1×10=10**

1. The main aim of research is to establish the—  
a) Truth  
b) False  
c) Belief  
d) Trust

2. Inference drawing from the experimental data collected is performed through—  
a) Discussion  
b) Comparison  
c) Interpretation  
d) Computation
3. Applied research is to—  
a) Acquire knowledge  
b) Solve society's immediate problem  
c) Develop theory  
d) Stop corruption
4. Research designs of a project is prepared on the basis of—  
a) Survey informations  
b) Hypothesis of study  
c) Overall aim of the project  
d) One objective
5. For phylogenetic relationship studies the most reliable marker can be—  
a) Morphological  
b) Phylogenetic  
c) Molecular  
d) Biochemical
6. Application of statistical methods in biological research was introduced by—  
a) Watson  
b) R.A. Fisher  
c) Gregor Mendel  
d) John Goss
7. The act of selecting and constructing research technique is referred as—  
a) Research-designing  
b) Research-methods  
c) Research-planning  
d) Research modelling
8. Classification of collected data to homogeneous groups is important—  
a) for preparing project report  
b) for data presentation  
c) to get meaningful relationships  
d) For none of the above
9. The observation method commonly used in studies relating to behavioural sciences is—  
a) A scientific method  
b) Not a scientific method  
c) An accepted method  
d) None of the above

10. A search for knowledge through objective and systematic method of finding solution to a problem is—

- a) Experimentation
- b) Demonstration
- c) Research
- d) None of the above

\*\*\*\*\*