

**M.Sc. BIOTECHNOLOGY  
THIRD SEMESTER  
RESEARCH METHODOLOGY  
MBT-303**

Duration: 3 Hrs.

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. Write short notes on the following: (2×5=10)
  - i. Synopsis
  - ii. Pantry audits
  - iii. Questionnaire
  - iv. Bibliography
  - v. Standard error
  
2. What do you understand by research methodology? Discuss its importance in planning and carrying out research successfully, which contribute knowledge for utilization towards benefit of the society. (3+7=10)

Or

What is research objective? Explain the different groups of research objects, giving justified examples. (3+7=10)
  
3. Explain 'Sampling design'. Innumerate the aspects a research scholar needs to consider while developing a sample design for research studies. (4+6= 10)

Or

What do you mean by interpretation? Discuss its importance in research studies. What precautions a researcher needs to take while interpreting his data? (2+4+4=10)
  
4. "Empirical research in India, in particular, creates so many problems for the researchers". State the problems that are usually faced by such researchers. (10)

Or

What is research design? Discuss the basis of stratification to be employed in sampling public opinion on inflation. (10)
  
5. What are the various data collection methods, generally adopted in research studies? Give a comparative account on merits and demerits of the 'Observation Method' and 'Interview Method' of data collection. (3+7=10)

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**[ PART-A: Objective ]**

**Fill in the blanks:**

**1×10=10**

- i) A scientific and systematic method in search for pertinent information on a specific topic is defined as.....(research-designing/ research-methods/ research-planning)
- ii) A researcher needs to work as a .....and derive the truth. (judge/ expert/ philosopher)
- iii) The .....marker technology is considered to be the most reliable method for phylogenetic relationship studies. (morphological/physiological/ molecular)
- iv) A search for knowledge through objective and systematic method of finding solution to a problem is..... (experimentation, demonstration, research)
- v) Inference drawing from experimental facts is performed through .....of data collected. (discussion/comparison/interpretation)
- vi) In exploratory studies, a research design should be.....(flexible / definite/indefinite)
- vii) Research provides the..... for nearly all government policies in our economic system. (guidance/ basis/ solution)
- viii) Careful planning of procedural design yields results to support the .....of the investigation. (interpretation/objectives/results)
- ix) Interpretation refers to the task of drawing .....from the collected facts of an experimental study. (conclusion/inference/justification)

- x) Bioinformatics proves to be an important .....of available information's related to research activities. (source/database/collections)

**Tick the correct answer from the following:**

**1×10=10**

- i) Validity is more critical to measurement than reliability. (True/False)
- ii) Time targeted work plan is not possible in scientific research. (True/False)
- iii) A search for knowledge through objective and systematic method of finding solution to a problem is research. (True/False)
- iv) Research methodology is not concerned with the techniques employed in a planned manner for collection of data. (True/False)
- v) The main objective of research is to generate wider knowledge in various fields of society's interest. (True/False)
- vi) Literature survey provides initial knowledge for understanding the necessity of basic research for solving problems. (True/False)
- vii) t-test is applied to examine the correlation between two sets of parameters of divers characters of the study materials. (True/False)
- viii) Findings from a logically designed systematic experimentation, ensures its applicability in constructive purposes. (True/False)
- ix) Collection of information's/ data using 'questionnaire' method can't be relied upon in research. (True/False)
- x) The term 'Variance' was first used by P. R. White in biological research. (True/False)

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