

**M.Sc. BIOTECHNOLOGY
SECOND SEMESTER
BIOSTATISTICS AND RESEARCH METHODOLOGY
MBT-204**

**SET
A**

Duration: 1hr. 30 mins.

Full Marks: 35

[USE OMR SHEET FOR OBJECTIVE PART]

(Objective)

Time: 15 mins.

Marks: 10

Choose the correct answer from the following:

1 × 10 = 10

- The research based on generalizations and formulations of theory are:
 - Applied research
 - Fundamental research
 - Both a and b
 - None of the above
- The term 'Ex post facto research' is used for:
 - Analytical research
 - Descriptive research
 - Applied research
 - Fundamental research
- Following term is/are part of personal interview:
 - Focused interview
 - Clinical interview
 - Non-directive interview
 - All of the above
- Pilot survey is advisable to be done before:
 - Personal interview
 - Collection of data through questionnaire
 - Telephonic interview
 - None of the above
- Following is/are the important factors while selection of appropriate method for data collection:
 - Nature, scope and object of enquiry
 - Availability of funds
 - Time factor
 - All of the above
- Type-I error is:
 - Rejecting the null hypothesis when it is true
 - Rejecting the null hypothesis when it is not true
 - Not rejecting the null hypothesis when it is true
 - Not rejecting the null hypothesis when it is true
-test is used when the sample size is large.
 - Chi-square
 - Students t
 - F
 - Z
- Which of the following statement is the two-tailed test?
 - There is significant difference between the true and hypothetical value of a parameter
 - There is no significant difference between the true and hypothetical value of a parameter
 - Hypothetical value is greater than the true value
 - Hypothetical value is less than the true value

9.test is used in ANOVA.
- a. Chi-square
 - b. Students t
 - c. F
 - d. Z
10. In a multiple regression with three variables, there are:
- a. Two dependent and one independent variables
 - b. One dependent and two independent variables
 - c. Either a or b
 - d. Neither a nor b

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(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

1. Explain the various types of research. 5
2. Explain the techniques involved in defining a research problem. 10
3. How primary data collection is done through observation and interview method. Explain. 10
4. To test the efficiency of a new drug a controlled experiment was conducted wherein 300 patients were administered the new drug and 200 other patients were not given the drug. The patients were monitored and results were obtained as follows: 10
Cured Condition Worsened No effect
Given the drug 300 40 60
Not given the drug 150 35 5
[Given, $\chi^2_{0.05} = 3.84$ 5.99 7.8
Df = 1 2 3]
5. Explain with example(s), how do you associate the variables by regression analysis in Biological Science. 5+5=10
Write short notes on Complete Randomizes Design and Randomized Block Design.

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