

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

**SET  
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

Time: 15 mins.

( Objective )

Marks: 10

*Choose the correct answer from the following:*

*1×10=10*

- In simple regression line with two variables, there is/are:
  - Only one regression line
  - At least one regression line
  - Two regression lines
  - At least two regression lines
- Which of the following is null hypothesis?
  - There is significant difference between the true value and a hypothetical value of a parameter
  - There is no significant difference between the true value and a hypothetical value of a parameter
  - True value is greater than the hypothetical value
  - True value is less than the hypothetical value
- The research based on generalizations and formulations of theory are:
  - Applied research
  - Fundamental research
  - Both a and b
  - None of the above
- ANOVA is used to test the:
  - Several population means
  - Several population variances
  - Both a and b
  - Neither a nor b
- Type-I error implies:
  - Not rejecting the null hypothesis when it is not true
  - Not rejecting the null hypothesis when it is true
  - Rejecting the null hypothesis when it is not true
  - Rejecting the null hypothesis when it is true
- 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
- Educated respondents become a factor in case of:
  - Personal interview
  - Collection of data through questionnaire
  - Telephonic interview
  - None of the above

9. Following is/are the important factors while selection of appropriate method for data collection:
- a. Nature, scope and object of enquiry
  - b. Availability of funds
  - c. Time factor
  - d. All of the above
10. Interpretation refers to the:
- a. Task of drawing inferences
  - b. Search for broader meaning of research findings
  - c. Both a and 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 Interview method of primary data collection. 5
2. A certain drug was administered to 456 patients out of a total of 720 in a certain locality to test its efficiency against COVID-19. The incidence of COVID-19 is shown below. Find out the effectiveness of the drug of against the disease. (The table value of  $\chi^2$  for 1 degree of freedom at 5% level of significance is 3.84). 10  

	Infection	No infection
Administering the drug :	144	312
Without administering the drug :	192	72
3. Explain null hypothesis and alternative hypothesis. 5+5=10  
Write all the steps in testing of hypothesis.
4. Elaborate the techniques involved in defining a research problem. 10
5. Explain the collection of data through questionnaire. 10

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