



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(OTT)-2021/B.Sc.(OTT)-2022/B.Sc.(OTT)-2023

Course Name – Research Methodology and Biostatistics

Course Code - BOTTE604

(Semester VI)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Select the main criteria of research objectives
 - a) It helps to achieve the research goal
 - b) It formulates the data collection procedure
 - c) It relies on the data interpretation method
 - d) It helps to identify research problems
- (ii) You are trying to find out the cause of breast cancer. Identify the type of research you want to do.
 - a) Descriptive
 - b) Analytical
 - c) Qualitative
 - d) Applied
- (iii) You are trying to find out the treatment of prostate cancer. Identify the type of research you want to do.
 - a) Descriptive
 - b) Analytical
 - c) Qualitative
 - d) Applied
- (iv) Select which is not a participant right in a research.
 - a) Providing consent for research
 - b) Not providing consent for research
 - c) Seeking confidentiality of data
 - d) None of these
- (v) Select the correct option: Purposive sampling, quota sampling, convenience sampling and snowball sampling are all examples of
 - a) Probability sampling
 - b) Non probability sampling
 - c) Cluster sampling
 - d) Systematic sampling
- (vi) Identify the characteristics of pilot study.
 - a) The researcher tests the design of the research project, usually the data gathering method(s) to be used in the research project, before carrying out the research
 - b) The research supervisor carries out the research
 - c) The research project is designed but it is not carried out
 - d) The student researcher learns how to carry out research
- (vii) Identify the median: 87, 65, 70, 62, 9, 75, 89

- a) 65
c) 75
- b) 70
d) 72.5
- (viii) Identify the following which is not a method of research.
- a) Observation
c) Randomness
- b) Survey
d) Experiment
- (ix) Identify the process that is not required in experimental research.
- a) data collection
c) evidence collection
- b) data interpretation
d) reference collection
- (x) In a research paper, choose the portion of text which is identified as Abstract.
- a) Synopsis
c) Glossary
- b) Bibliography
d) Quotations
- (xi) Write the correct statement for null hypothesis.
- a) It proposes that no statistical significance is there between two sets of data.
c) It is always be rejected.
- b) It proposes that there is statistical significance between two sets of data.
d) It is always be accepted.
- (xii) List of the following is a parametric statistical test.
- a) Mann-Whitney U test
c) Chi-square test
- b) Wilcoxon signed-rank test
d) Analysis of Variance (ANOVA)
- (xiii) A researcher distributes a survey to 2,000 people to summarize their current social media usage patterns, such as average daily hours and most used platforms. What type of research is this primarily an example of?
- a) Analytical Research
c) Meta-analytic research
- b) Experimental Research
d) Descriptive Research
- (xiv) A survey asks people to rate their satisfaction with a service as 1 = very dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied. What kind of number use best describes this rating scale?
- a) Nominal numbers
c) Ratio scale
- b) Ordinal numbers
d) Odd number
- (xv) A health researcher divides a city's residents into age groups (18–29, 30–44, 45–59, 60+) and then randomly samples from each group in proportion to its size. What sampling technique is being used?
- a) Systematic sampling
c) Stratified random sampling
- b) Snowball sampling
d) Cluster sampling

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Discuss the role of research methodology in conducting a research. (3)
3. Compute the median of the given data: 7, 4, 3, 5, 6, 3, 3, 3, 2, 4, 3, 4, 3, 3, 4. (3)
4. Give example of snowball sampling. (3)
5. Describe different descriptive study designs. (3)
6. In a research protocol, the effect of the duration of sleep on headache was assessed in same temperature, humidity and light. Analyze different variables in this research protocol. (3)

OR

Estimate the standard deviation, if the variance is 1.44 (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Differentiate between case control study and cohort study. (5)
8. Summarize Stratified sampling (5)
9. Explain the steps involved in defining a research problem. (5)
10. Explain with example: Bar diagram can be used in data presentation. (5)

11. Create a frequency distribution table (using tally marking) from the age of the students in your class: 21, 21, 20, 21, 19, 22, 24, 25, 20, 21, 22, 22, 23, 19, 20, 21, 21, 20. (5)

12. A city has a population of 500,000. On January 1st, 2,500 residents are known to have chronic obstructive pulmonary disease (COPD). During the year, 600 new cases are diagnosed, and 300 people with existing COPD die. Assuming no migration and that the population size remains constant, what is the period prevalence of COPD for that year? (5)

OR

Calculate the standard deviation of the given data: 5, 8, 17, 6, 13, 11. (5)

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